

CIO

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COVER STORY

Harbor Lights

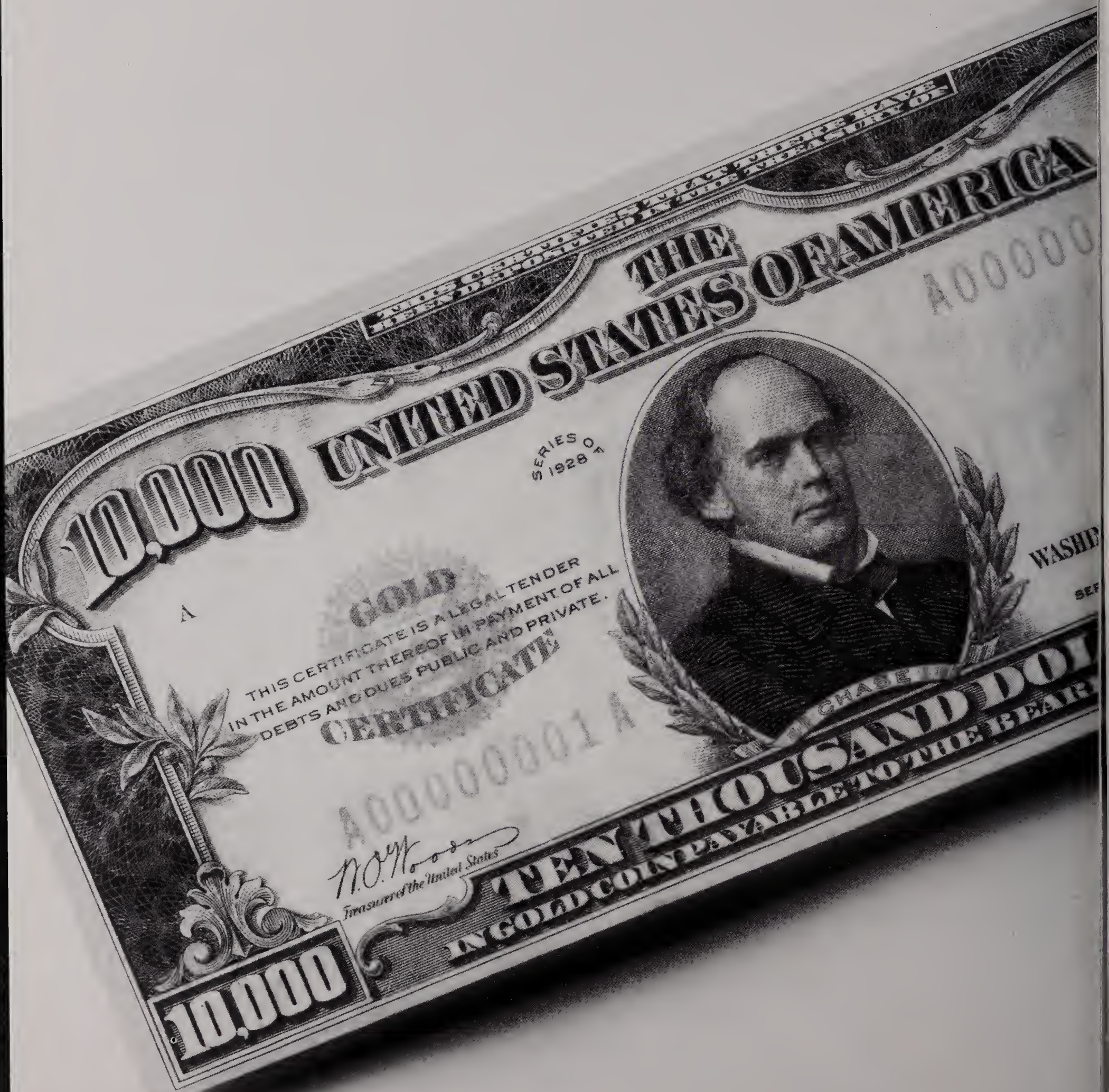
How The World's
Top Commercial Port
Remains Shipshape

ALSO INSIDE

Doing
Business
In Vietnam

The Port Of Rotterdam's
Koos Iseger

AN INTERNATIONAL DATA GROUP PUBLICATION



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CIO

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COVER STORY

EUROPEAN SPOTLIGHT: PORT OF ROTTERDAM 50

First Port of Call

With economic storm clouds on the horizon, the Port of Rotterdam is battenning down the hatches against competition from other European harbors. A program to promote IT innovation among third-party port service companies may just be the anchor Rotterdam needs to secure its status as the world's largest commercial port.

By Richard Pastore



*The winds of change
Cover photo by
Bart Marijnen /
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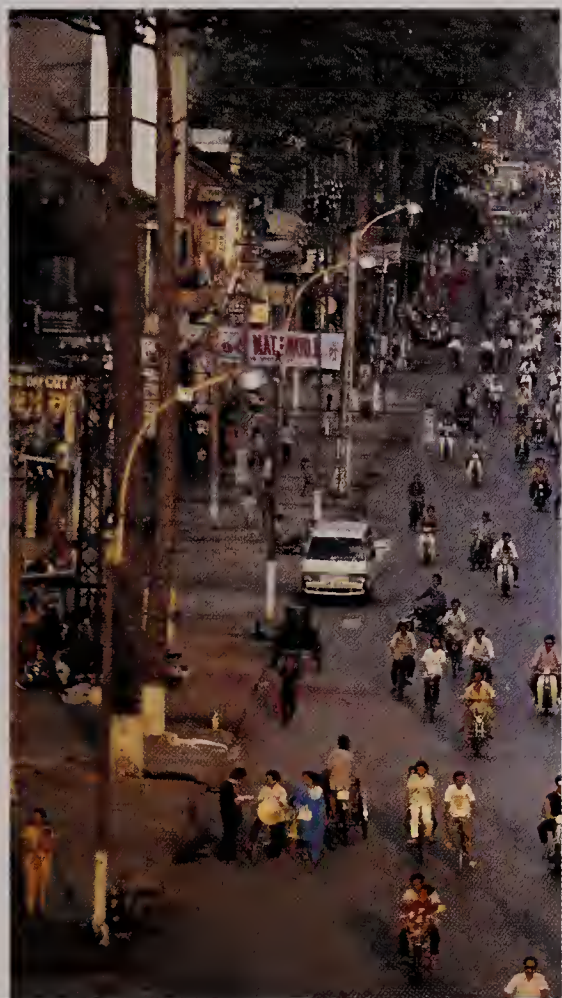
Perception Is Reality

If a customer of the IS group isn't happy, it doesn't matter how dramatically uptime is up or how consistently I/O is OK. Since most problems are in the eye of the beholder, IS needs reliable ways of seeing itself as others see it.

By Megan Santosus



*Focusing on
customers 38*



I.T. IN VIETNAM

58

Good Market, Vietnam

Vietnam is widely viewed as one of the hottest global markets emerging today. The country currently faces a multitude of political, technological and infrastructural limitations, but for companies willing to tackle the resulting challenges, the rewards can be many.

By Lynda Radosevich

*The new
Asia miners
58*

MORE ►►►

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HP PCs
for network-ready features and prices?
Prepare to have that idea
shattered.

You should ask what Compaq means by 'network-ready.' For instance, are their PCs easiest to set up in multivendor networks? Is their management solution industry-standard – and can it manage all brands of PCs, not just their own? Are all management features available under Windows 3.1? Are they free? In HP's case, the answers are all yes.

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In addition, HP ranked best overall among desktop personal PC users in the 1994 J.D. Power and Associates Customer Satisfaction Study.¹

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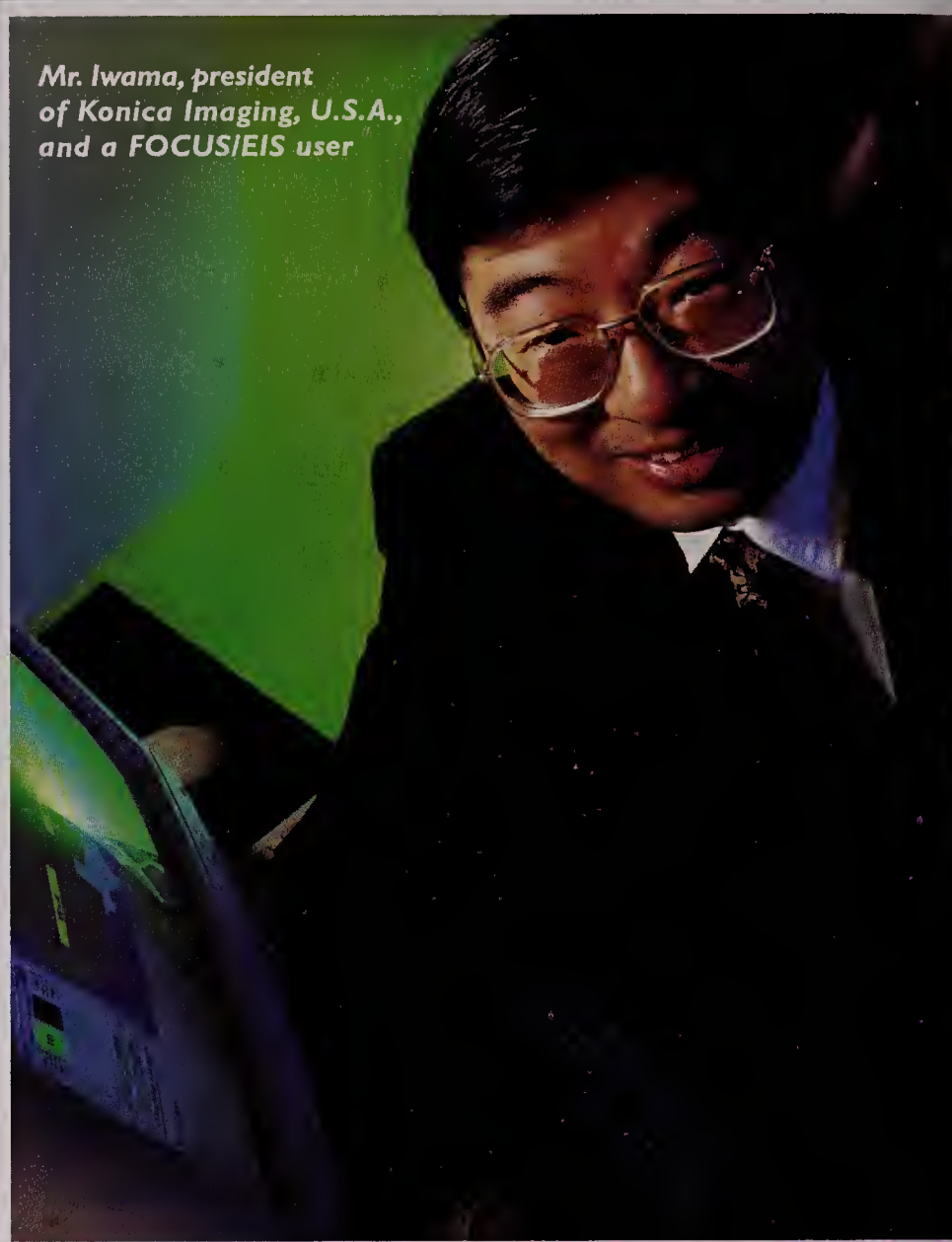
HP mouse and keyboard. ¹Source 1994 J.D. Power and Associates PC Customer Satisfaction Study.SM Study conducted among business users and based on 1,528 user respondents. MS-DOS is a
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“FOCUS/EIS GAVE US MORE THAN GREAT DECISION SUPPORT. IT GAVE US ESP.”



Carmine Morello
IS Director
Konica Imaging, U.S.A.



Mr. Iwama, president
of Konica Imaging, U.S.A.,
and a FOCUS/EIS user

ESP It's an abbreviation for "Encouraging, Striving, Providing"... the company motto for Konica Imaging, U.S.A. It's also the name of Konica's new suite of killer apps for decision-support developed in just 10 weeks using FOCUS/EIS for Windows.

INSTANT ON-SCREEN TREND ANALYSIS

With FOCUS/EIS, Konica replaced thousands of pages of printed reports with on-screen graphical snapshots of sales performance, profit margins, and buying trends. Color-coded exception analysis allows Konica managers to pinpoint critical trends in a matter of seconds. And virtually any summary number or screen graphic can be programmed as a hot spot for point-and-click drill-down to more detailed information.

CLIENT/SERVER REPORTING MADE SIMPLE

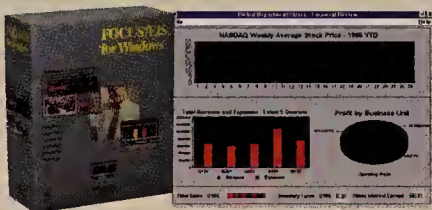
FOCUS/EIS for Windows gives Konica managers instant access to data hosted on its midrange computer systems. All the screens are data driven, which means the graphics and summary numbers change automatically

whenever the data is refreshed. The graphical interface is so intuitive, even Konica executives with minimal computer experience began using the system with almost no training.

NOT JUST ANOTHER PRETTY FACE

Konica managers need to analyze more than two years of historical data. That takes a lot more than a pretty interface. FOCUS/EIS, exploits the unparalleled power of FOCUS, the official reporting standard at thousands of the world's leading corporations and government agencies. With FOCUS/EIS, Konica managers can slice and dice data in almost any way imaginable for more informed business decisions, better planning, and maximum profitability.

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The Sound and The Fury

Tomorrow's technology is happening *now*. How do IS managers prepare today for a future that is both intriguing and unpredictable?

By John Edwards

Pulling
together
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INSIGHTS: THE TEAM AT THE TOP

The effectiveness of the CEO/CIO relationship can be a decisive factor in a company's success or failure—particularly when an organization is undergoing a major business transformation.

By Joseph Movizzo and Robert M. Howe

CHANGE MANAGEMENT

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THINK TANK: BIG CHANGE COMES IN BIG PACKAGES

Companies implementing SAP AG's megasoftware package face large-scale changes in strategies, structures, processes and culture.

By Tom Davenport

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CIO LIGHT: I AM THE WEB MAN

He's been slapped with lawsuits and dogged by cash-flow problems, but an undaunted Ezra Poundcake refuses to be silenced. With the help of the Duke of URL, our pundit in residence has hung his shingle in cyberspace.

By Ezra Poundcake

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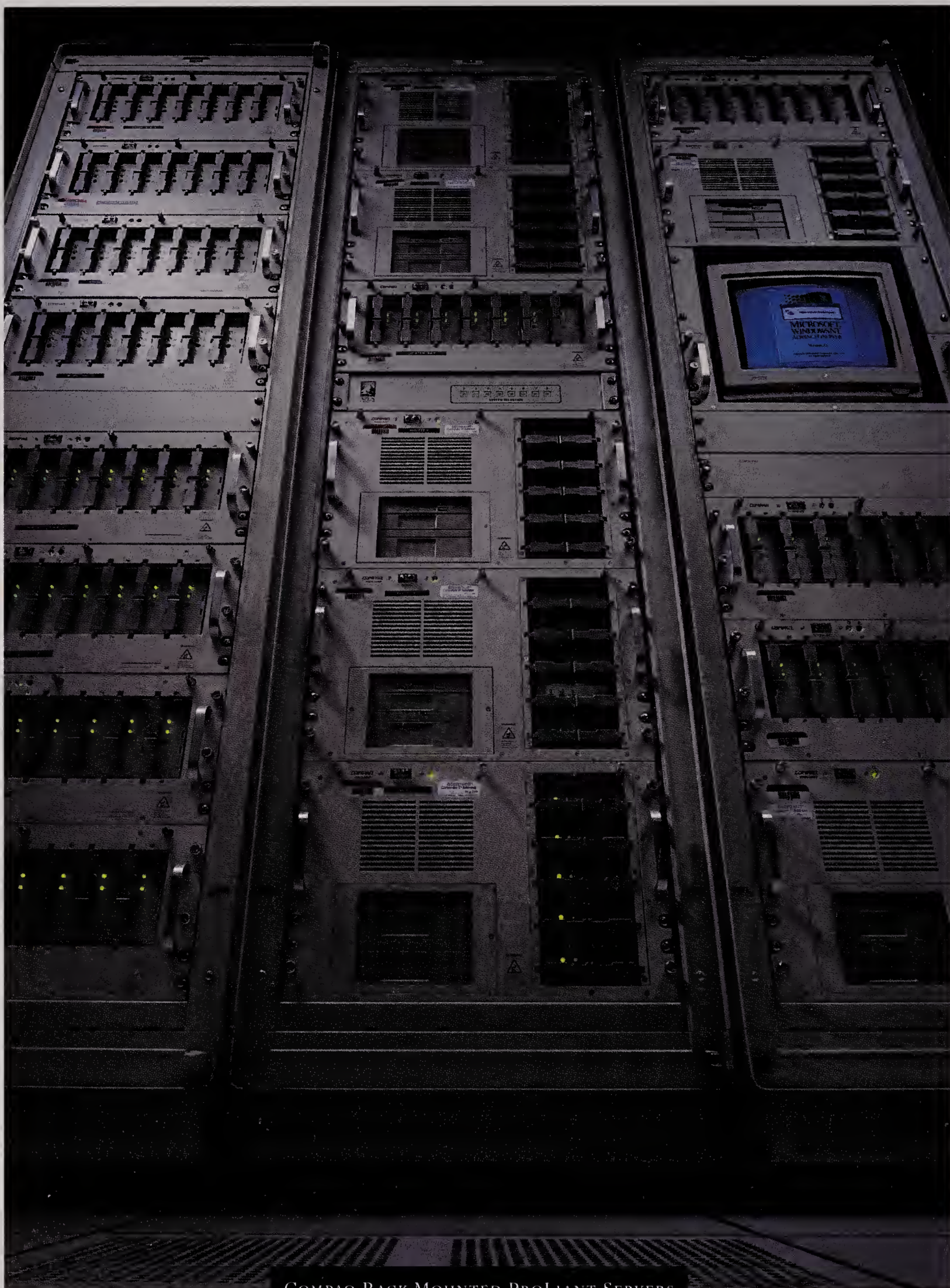
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COMPAQ



Keeping IS customers happy in today's distributed computing environment requires a bold new approach to measuring and delivering customer service.

As she began researching her feature story "Perception is Reality," which starts on Page 38, Senior Writer Megan Santosus quickly uncovered a simple truth: Client/server computing is dramatically rewriting the definition of customer service. The traditional service metrics—such as system uptime, number of calls to the help desk or annual user surveys—no longer paint a clear picture of how well IS is performing.

Here's how some companies have reengineered customer service:

Atlanta-based retailer Home Depot does not distinguish between its internal and external customers. Both sets of customers are expected to receive the same level of service, whether it's an employee calling the help desk or a customer returning a lawn mower.

The information systems and services group at Texas Instruments learned that the service perceptions of its desktop end users (who know the software) differ from those of business unit managers (who know the corporate mission). The company had to learn to ask the right questions of each group—and then to satisfy their individual expectations and needs.

The big challenge for IS is to deliver service to its customers as *they* define it, not as the performance statistics portray it.

At *CIO*, we too strive to keep our customers' needs in mind. That's why in this issue we're launching a new editorial feature called "European Spotlight," an occasional series of mini profiles of European firms and their CIOs. The series' creator, Senior Editor Richard Pastore, recently spent three weeks talking to information executives across Europe. In our first spotlight, beginning on Page 48, Pastore focuses on the Port of Rotterdam, the largest in Europe, where IS helps increase the efficiency of operations and maintain Rotterdam's viability in the face of competing ports on the Continent.

Also in this issue, *CIO* introduces "Think Tank," a new column by Thomas H. Davenport, the respected director of the Information Management Program at the University of Texas, Austin. Tom will explore a wide range of topics of interest to CIOs. In his first column, which begins on Page 32, he examines the broad changes in organizational strategies, structure, processes and culture facing corporations that choose to implement SAP's "mega-package" mainframe or client/server solution. Tom welcomes your feedback at: Tdav@notes.bus.utexas.edu.

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"An employee with a systems problem should be treated just like a consumer returning a lawn mower."

—Andrew Delany
Help desk manager
Home Depot Inc.

When "customer satisfaction" became the battle cry of companies throughout the land, many organizations retooled their service departments to meet the expectations and demands of their external customers. Yet many of these companies failed to apply the same level of courtesy and service to internal customers.

Are the end users in your organization satisfied with the level of service they get from your IS department's help desk? If your conclusion is "yes" based strictly on surveys you've conducted, the real answer is probably "no." "Perception is Reality," on Page 38, provides examples of how companies are using qualitative research for measuring end-user satisfaction. Tracking operational performance and help desk calls is just one component of assessing contentment among end users. "What IS has to figure out is how to deliver value to customers as defined by the customers," according to Joseph P. O'Leary, partner in charge of the customer satisfaction practice at Arthur Andersen. And that requires a proactive approach to problem solving.

To complicate matters even further, internal customers come in all varieties. You have senior-level managers who are concerned with how IS is achieving the corporate mission. You have mid-level managers who must adhere to the corporate mission and manage the productivity of their departments. And lastly, you have the end users—the employees who rely heavily on the hardware and software on a day-to-day basis.

Satisfying all these constituents is no easy task. But it can be done. And, as you will read, it has already been accomplished by the CIOs featured in this article.

Wynne L. Wray

P.S. Immerse yourself in a practical study of the value of IT. The fourth annual Enterprise Value Retreat, to be held Jan. 21-23, 1996, at the Arizona Biltmore, gives you the opportunity to meet and work with a distinguished group of business executives, senior IT practitioners, business school leaders and heads of technology companies. By analyzing a real-life case study, participants will learn how to effectively manage the process of information technology acquisitions. For more information please call 800 355-0246 or visit our Web site at <http://www.cio.com/conferences/enterprise.html>.

Coming In CIO

Object-Oriented Technology

Today, the average large company has seven to 10 different operating systems, so a lasting architecture that will facilitate communication at the application level will most likely be based on object technology. Object technology looks promising because it enables component-based systems, or reusable software, that will likely lower development and maintenance costs. Some analysts predict that off-the-shelf components will soon take off, now that Windows 95 makes it possible to run OLE applications. How can CIOs take advantage of object technology and minimize the risks involved?

A Good CIO is Hard to Find

Some IS executives are signing on for limited engagements as CIOs at various companies. What's driving this trend? Are these all turnaround situations? Limited-engagement projects? Or are companies just looking for someone to fill in until they can find a permanent candidate? We look at the changing role of the CIO in the '90s and why top-notch CIOs are hard to find.

Benchmarking IT

Can benchmarking help IS contribute to business success? To find out, *CIO* revisits the concept with a group of both early adopters and more recent practitioners to determine if IT benchmarking is a vital tool in the business improvement tool chest.



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TRENDLINES

TELECONFERENCING

A MOVABLE FEAST

The prospect of a New Yorker having a virtual dinner with a client in San Francisco sounds more like the kind of experience that Capt. Picard would dine out on than your average U.S. citizen. With the advent of a concept called teledining, however, the idea becomes more reality than science fiction.

The product is a joint project of Englewood, Ohio-based Teleport Corp. and



IBM Global Network. One teledines using a custom-built dining area (called a telesuite, naturally). Participants sit at one half of the table, which butts up against a table-to-ceiling high-reso-

lution video screen. Using Teleport's video-mirroring technology, the screen projects full-size video images of one's dining partners. "You look into your screen, and it looks like the other

half of your table," says Teleport Project Manager Scott Allen. "Although it's another room in another city, it feels like one room, and you're at one table."

The partners are starting to build telesuites in 40 U.S. cities, aiming to have 120 installed by the end of 1996. By the end of five years, says Allen, they plan to have at least 600 sites set up at hotels, restaurants and other public locations. The companies are also talking to private corporations to build suites for private business dinners.

One of the biggest selling points for public use, says Allen, is its simplicity. "You just dial an 800 number and make a reservation. Our staff will ask the locations of the parties involved, and then they schedule an appropriate time and location. Then you just show up." IBM will handle the transmission, and there is no intrusive equipment in the room.

One other thing telediners have to do, naturally enough, is pay up. But the cost is surprisingly reasonable. Pricing ranges from \$69 to \$149 per suite hour for each location, depending on the market involved and the time of day. Food, unfortunately, costs extra.

Although transcoastal dining may be just the ticket for friends and business colleagues separated by the miles, it also complicates the logistics of standard dining etiquette considerably. Just think, for example, how difficult it could be to pass the salt.

—Carol Hildebrand

RE • CALL (V): AN ACT OF INTEGRITY

Talk about making somebody eat their words. In June, Merriam-Webster Inc. discovered that the Windows version of its Collegiate Dictionary contained a virus with the potential to corrupt key files on a computer. Data was particularly vulnerable when an infected diskette was left in the disk drive and the computer was turned on.

Rather than leave customers to fend for themselves, the Springfield, Mass.-based publisher recalled the entire batch of the Windows version (fortunately for Webster, the virus was detected early in the shipping process). The CD-ROM and Macintosh versions received a clean bill of health. Kara Noble, an assistant editor, believes that fewer than 200 people actually purchased the product. "We provided all the information possible about

the virus to our customers so that they would know what to look for if their computers were infected," she says. "We also gave them anti-virus software." Only one customer experienced problems with infection, Noble says, and her problems were resolved quickly.

By mid-summer, Merriam-Webster fixed what could have been a software vendor's nightmare. Although the origin of the virus has yet to be determined, the recall was successful and new versions of the product are now available. Best of all, the company got rave reviews from customers and others in the industry for the way it handled the problem, says Noble. (According to customer satisfaction experts, a problem solved can be better than no problem at all. See "Service Stars," CIO, August 1995.) ■

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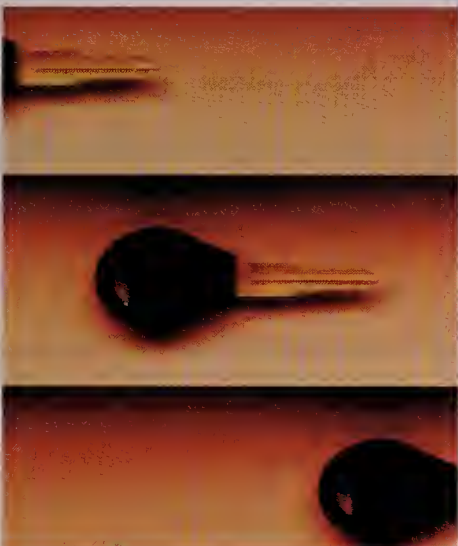
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DATA ARCHIVES

HOT SITE, COLD STORAGE

How long do your business archives have to be accessible? Ten years? Fifty? If you're Yousef Eisa, information systems manager for United Kingdom Nirex Ltd., try 10,000 or so.

Eisa's employer is in the business of managing nuclear-waste disposal facilities, including one planned for England's Cumbrian coast. The intermediate- or low-level waste includes things like cladding from nuclear fuel rods and protective clothing worn by workers. Some of it may still be "hot" tens of thousands of years from now. "Nobody's actually put a limit on it," Eisa says.

The facility, carved out of rock deep beneath green countryside, will be full sometime around 2060. After that, according to blueprints, human beings won't have to worry about it. The waste will be immobilized in cement inside steel drums, which themselves will be embedded in more cement. However, the project will still be operational well beyond the lifetimes of today's scientists and engineers, whose successors will continue to need access to archival data right up to the rollout of Windows 11995.

The volume of information is daunting: Nirex staff are producing documents at the rate of 100,000 a year, and the number is increasing.

Eisa, whose office is in the town of Harwell, south

of Oxford, admits he hasn't yet found a final solution to the multimillennia problem. How to store documents for thousands of years is at the moment a theoretical issue.

But he and his colleagues are already using an array of technologies designed to get around the compatibility

woes that inevitably plague the long-term electronic storage of documents created in diverse formats. His solutions are relevant to anyone managing an electronic archival system.

First and foremost, Eisa says, is not to depend on any one approach. "We don't

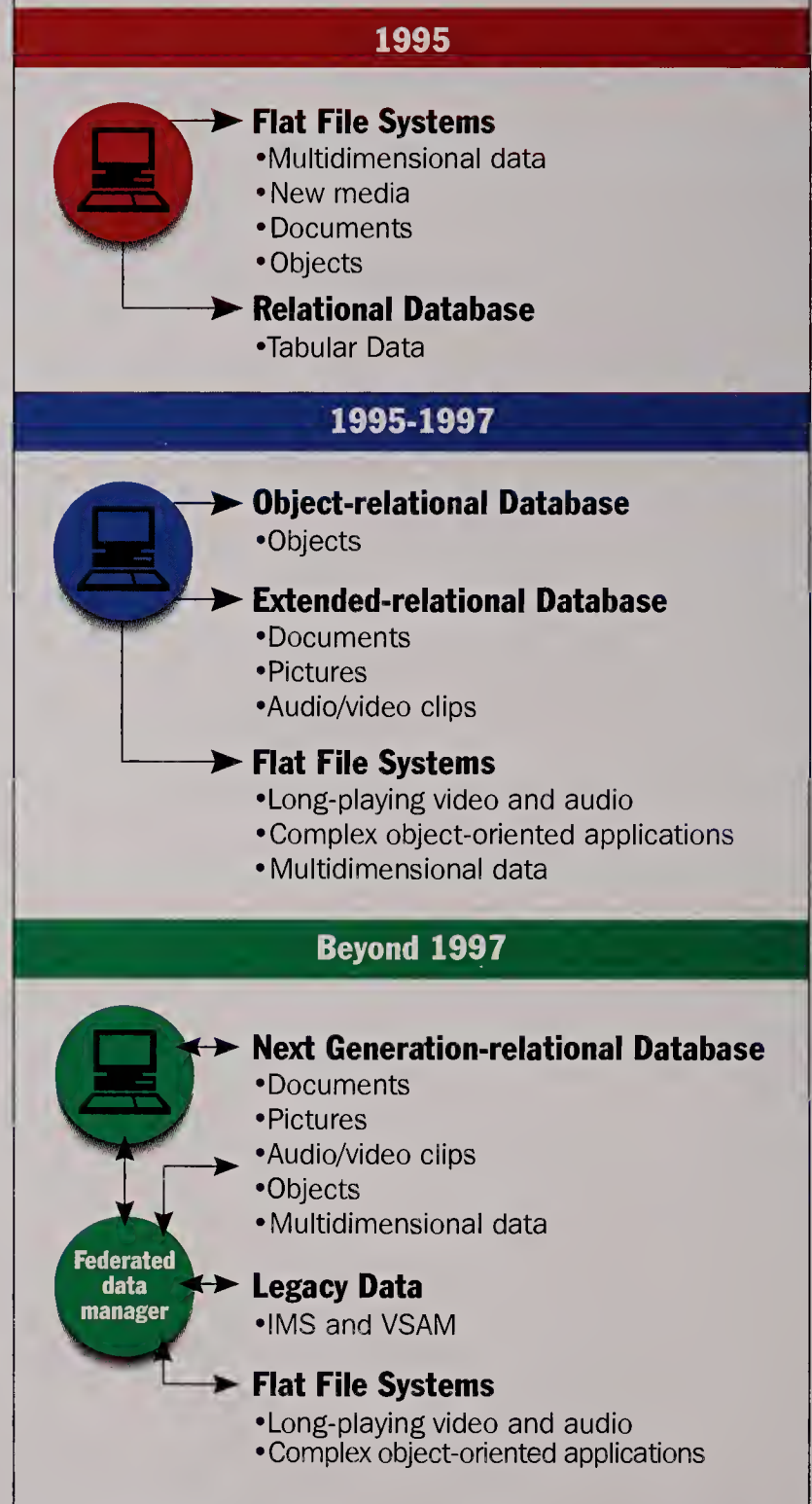
trust one particular medium," he says. Information is stored both on nonerasable WORM (write once, read many) disks and 50GB tapes. There are three backups of everything. The disks are stored in 200GB NKK Corp. jukeboxes that allow remote access from PCs within

DOES YOUR DATA DANCE?

Complex data requires new data management strategies, according to a report from Forrester Research Inc. Some database vendors (Forrester mentions Informix and IBM) are extending their relational engines to increase the data types their products manage. After 1997, the report predicts, next-generation server databases will combine extended-relational and object-relational technologies and support multidimensional data, new media, documents and objects. Forrester can be reached at 617 497-7090.

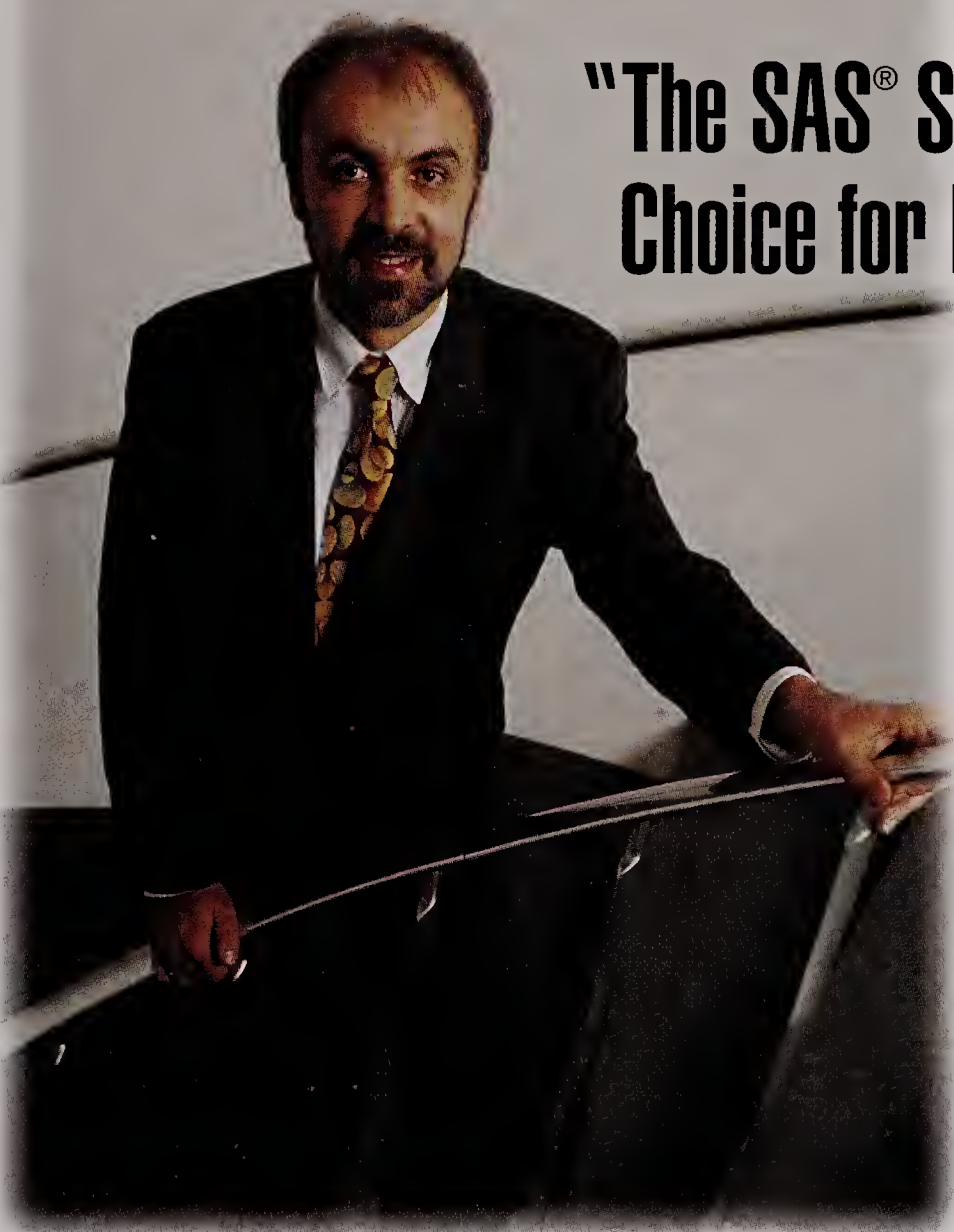
IBM is helping companies figure out how to exploit and manage these new data types by offering CIOs customized, hands-on seminars at its Multimedia Executive Briefing Center. The center provides a full day of sessions for a company's CIO and other executives. For more information, call 800 426-9402, Ext. 4EC.

Database Evolution



SOURCE: FORRESTER RESEARCH

CHART BY MICHAEL SIGGINS



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Moser contends that using the SAS System has also turned traditional developer/end user wars into "a cooperative process. Now they sit side by side, building the application together." And saving the bank both time and money.

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They're finding answers in the SAS System, which enables over 70 financial analysts to advise portfolio managers on the best portfolio mix. "Our strategy is to find ways to enable analysts and financial advisors to handle information more easily and quickly," says UBS Vice President Beat Moser. "What that meant was finding a software tool that could eliminate the redundancy of information and time caused by the use of several different analysis products—each limited in terms of functionality and ability to access key data. And it meant finding a tool that allowed applications to be developed, and changed, fast."

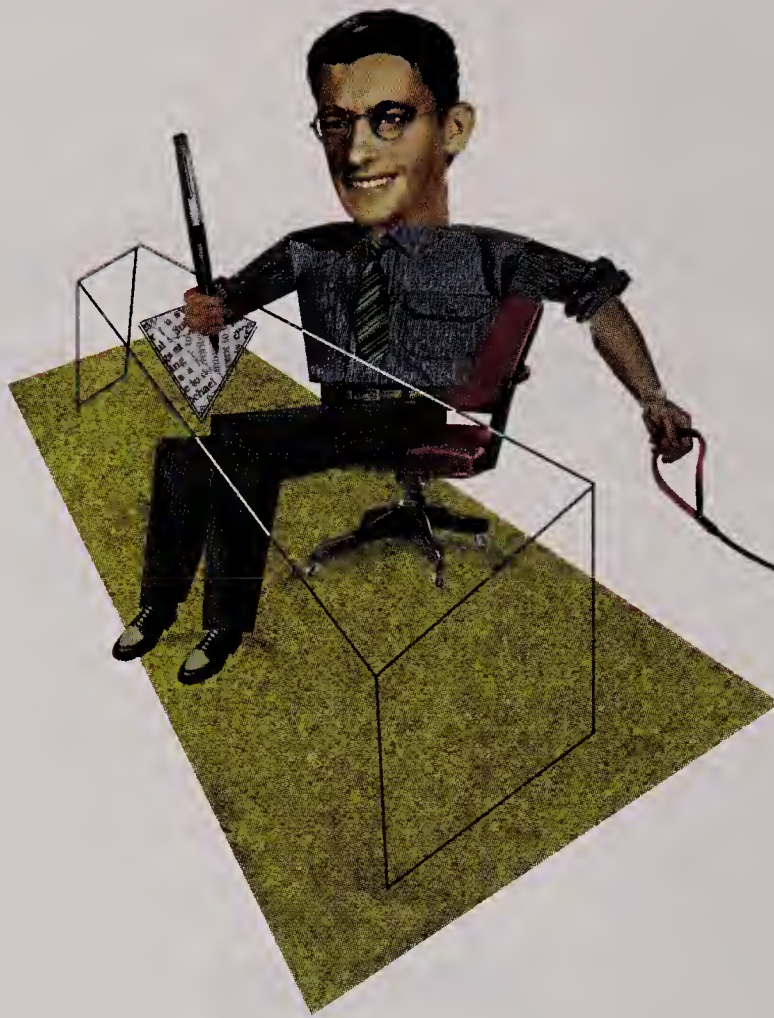
Smart Move, Smart Money Moser believes that UBS has resolved those challenges in their choice of the SAS System as their strategic software. "Our previous system required many labor-intensive steps as data was moved from one software product to another," recalls Moser. "Today data access, management, and summarization is handled automatically by the SAS System. This has given us productivity gains of up to 200% in some areas. The SAS System is fully integrated and meets most of our analysis needs—it's our strategic choice in various research units of our bank."

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about 20 seconds. The system already has some 200 users who access it constantly during the preliminary phases of the project—which, according to current plans, will begin operating around 2010.

Information generated on paper—everything from contracts to correspondence with Greenpeace—is scanned into the system, either at a central scanning center or in other Nirex offices. The system depends on widely known optical standards. Workstations are equipped with the universal viewing software known as Outside In, which allows users to call up a variety of documents, be they letters written in WordPerfect, Excel spreadsheets or CAD drawings.

Recently, Trimco Enterprises Ltd., a London-based document management company, installed a system at Nirex that allows users to search and quickly retrieve the 400,000 pages of scientific documents already archived. The Trimco system is currently available to 70 users in the Nirex science department and is being introduced enterprisewide.

Of course, it's impossible to guess what standards people will be using in the next century, let alone 10,000 years from now. But Eisa is confident that open standards will always be convertible. "As long as there are standards, there will always be a way to move from one technology to another," he says. Just in case, Eisa is using another form of backup whose compatibility has been well-tested: "Paper, of course."

—Jack Ewing,
zvaj1098@servus.rus.uni-
stuttgart.de

TELECOM SURVEILLANCE

HEAR NO EVIL?

Big Brother may or may not be watching, depending on your level of political paranoia, but by all accounts, he's finding it increasingly difficult to listen in. The proliferation of new communications technologies is wreaking havoc with law enforcement's efforts to get the audio goods on the bad guys.

In the good ol' days of monopolistic phone service and simple technologies like copper wire and mechanical

telephone switching devices, cops could tap robbers' phone lines simply and cheaply with a pair of well-placed alligator clips. But with the explosion of service providers and the advent of such technologies as packet switching, wireless communications and ISDN, all that incriminating talk is getting sliced and diced into uncooperative digitized chunks that travel a circuitous route to the proverbial darkened phone booth.



The government responded to crime fighters' pleas in late 1994 with a new law mandating that communications providers upgrade their current systems and design any new systems with the snooping G-men in mind, but there are a few

HIRING HELP NORTH OF THE BORDER

Employers and disabled job-seekers in Canada have a new resource available to them. The Canadian Council on Rehabilitation and Work and the Coalition for Persons with



Disabilities initiated a computer network that helps disabled individuals develop and post re-

sumes for access by potential employers.

The Wide Area Employment Network, designed by McGill Multimedia of Windsor, Ontario, consists of a resume database stored on a server from Dell Computer Corp. and a communications hub from Digital Equipment Corp. of Canada. Resume-creation software helps users develop resumes and goals. Adaptive devices from Access First make the software accessible to people with all types of disabilities, including hearing and visual impairments.

Over 10,000 job descriptions are stored in

the database, along with tips on what to emphasize when applying for a particular position. CCRW also plans to offer a training program to help people identify what skills they need for a desired career and where to acquire them.

Currently, the project is limited to the Peel-Halton-Dufferin area of Ontario, but soon it will be open to all of Canada's 3.75 million disabled citizens. Employers will be able to dial into either the main server or Dell site workstations, depending on their search. For instance, a company would probably limit its search for an entry-level employee to its own region, but it might want to tap the entire country for a senior-level executive.

"This is an employment rather than a rehabilitation project," says Pat Reiniger, national training coordinator for CCRW. "Now we have a method that [provides disabled citizens with] independent access and self-determination in pursuing their career goals." ■



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TRENDLINES

catches that have at least one observer, the Congressional Office of Technology Assessment (OTA), very worried.

In a report on the law, the OTA notes that the government has promised to reimburse service providers for the costs of retrofitting systems installed before January 1995 to provide proper surveillance capabilities. Yet no one knows exactly how much that is going to cost (Congress has ventured a guess of \$500 million) or where the money will come from. If government funds to reimburse service providers for upgrading old systems are not available, the system will be considered in compliance, even if nothing has

been done. That could leave large segments of the communications network without modern surveillance capabilities until those companies replace their systems with new technology (whose surveillance capabilities costs will be passed along to consumers, probably adding a few cents to a typical phone bill).

Further complicating the eavesdropping quest are the pace of technological change and the increasing fragmentation of the communications network. "You will see a mix of all kinds of companies—from cable companies to utilities—getting into the phone business," says James W. Curlin, project director at the OTA. "It's all moving too fast

for the government and law enforcement to keep up." A provision for funds to help the good guys buy the tools and technologies *they* need to keep technological pace with the changes is conspicuously absent from the bill.

So is anything that addresses the potential for conspiratorial chatter moving to new channels, like the Internet. The bill excludes private networks and "information providers" of e-mail and online services such as the Net. "That's probably the greatest niche in the armor of the legislation," says Curlin. "There's already software [VocalTec Inc.'s Internet Phone] available for having live telephone conversations over the Inter-

net.... I think the exemption for information service providers will go away in a few years."

The OTA won't be around to find out; it was due to be disbanded by Congress as of Sept. 30.

—Christopher Koch

THE GREEN PATROL

Trying to keep up with environmental regulations is enough to make some companies run for cover. EIS International, a Rockville, Md., developer of emergency management systems, has added an integrated environmental management system to its product line.

In the past, emergency response teams and government agencies have used EIS's PC-based programs—which combine maps, data models and communications modules—to coordinate relief efforts for such headline events as the California earthquakes, the Mississippi floods and the Oklahoma City bombing.

The company added EHS/LifeCycle to its lineup last April. The PC- and LAN-based software includes customizable modules on a variety of health, safety and environmental issues.

The interface depicts a library shelf stocked with three-ring binders full of cross-referenced data. Need guidance on handling accidental chemical releases? A click on the Hazard Assessment binder provides information on consequences and risk management planning. Floor plans, maps and other site-specific information can be incorporated into any of the modules and are readily accessible by clicking on an icon. ■

WOULD YOU LIKE THE CARIBBEAN CHICKEN OR THE BAKED ZITI?

Next time you grumble about airplane food, consider that the omelet that takes you but five minutes to eat represents hours of work for airline personnel. For each of United Airlines Inc.'s 1,000-plus daily flights, attendants must audit, verify and process invoicing for all meal services by manually marking checksheets. Add your omelet to the 75 million meals served by United every year, and you begin to see the problem.

To help manage all this, Client Server Technologies Inc. (CST) is developing a centralized meal-planning system for United that will automate the process of gathering meal data. The new system will retrieve and consolidate data pertaining to flight and meal sched-

ules, load factors, aircraft and equipment types from United's various mainframe systems. An automated billing-verification feature will allow for electronic variance reporting of expected meal service versus actual invoicing from all third-party caterers. The system will

share a database and be seamlessly in-

tegrated with a menu distribution system from which all service-level and menu-component planning information is retrieved.

"The core of the new system is a series of server-based processes that run uninterrupt-

ed," says Gary Arakelian, president of CST. "The new system will run in accordance with United's daily flight schedules, interface with each of its host mainframe systems and exchange time-critical data for checksheet reporting." Now maybe they'll have time to address that omelet problem. ■





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The Team at the Top

The effectiveness of the CEO/CIO relationship can be a decisive factor in a company's success or failure—particularly when an organization is undergoing a major business transformation

BY JOSEPH MOVIZZO AND
ROBERT M. HOWE

In a world of constant market turbulence, a company is more likely to be involved in a transformation process than not. Business transformation is being driven by worldwide competition, by global political and economic change, by sudden advances in technology and by major shifts in traditional markets.

It's no wonder that most large companies are constantly redefining how they go about doing what they do. In the process, change rolls across the organization, sending shock waves through the ranks of management and employees alike as old hierarchies are overturned and old work habits are exorcised.

It's not just the business that's being transformed; the CIO's role is radically changing as well. Gone are the days when the manager or director of MIS was the resident technologist—a computer professional who just happened to work at a financial services company, an airline or a manufacturing concern.

This change requires a new relationship between the CIO and the

CEO, one that emphasizes the value the CIO can bring to the transformation process by having an enterprise view, a process orientation and a broad understanding of the economics of the business and its industry. This is happening among world-class companies.

These are among the major findings in a series of research studies conducted by the IBM Consulting Group, which were undertaken to better understand the role of the CIO as it relates to business transformation. What we learned provides a welcome road map for the CIO involved in—and sometimes even initiating—corporate change.

The companies we studied that had achieved successful business transformations moved along a logical path consisting of several distinct stages: shared vision, blueprint, construction and leveraged investment. While the CIO is involved in all four of these stages, interaction with the CEO is most intense and most critical in stages one and four.

The single most powerful factor influencing successful interaction between the two executives was the CEO's attitude toward information technology. When they both shared the view of IT as an enabler of transformation, an excellent relationship existed.

Shared Vision

A 1993 survey of 200 non-IT executives (cited in the January 1993 issue of *CIO*) identified a trend that continues today. Seventy-eight percent of those surveyed believed that the CIO should be very involved in the formulation of overall business strategy and plans (up from 72 percent the previous year and 62 percent the year before that). In our recent studies, we found that an increasing number of IT executives are reporting directly to the CEO and are members of the

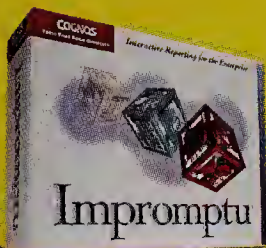




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But even more critical than the reporting relationships is the acceptance of the CIO by the CEO and other key executives as a valuable member of the overall executive team. Specifically, the CIO must be considered a business thinker with an enterprise perspective as well as a technology visionary who can describe in business, not technical, language how technology can be leveraged to achieve major change and enhance business strategy. There must be a shared vision in which a strategic direction is set, and clear and compelling common goals are provided.

In this initial stage, the CIO's relationship to the CEO is very clear. The CIO must:

- Establish in the CEO's mind that IT can be an essential agent of transformation;
- Help to create a shared vision for this transformation;
- Identify core IT competencies to support the new vision and achieve buy-in and approval for an overall strategy to achieve these competencies;
- Keep the CEO informed of relevant technology trends and their implications and the best practices in applying these technologies;
- Clearly communicate how IT strategies and architecture will be aligned with the new business vision.

Regarding the last point, building flexibility into an IT infrastructure can mean added cost and complexity, but it can also provide for a more rapid response to emerging business needs and create a long-term competitive advantage. A clear understanding and acceptance of this perspective on the part of the CEO can make a CIO's life a lot easier.

From Here to There

The middle stages require less CEO/CIO interaction. In the blueprint stage, a business model is established, business processes are redefined, and a master plan is constructed—one that provides for an overall yet detailed blueprint for the transformation. The construction stage involves the implementation of new processes. Shifts in the corporate culture are initiated,

The CIO can act as an entrepreneurial partner inside and outside the company, identifying, justifying and leveraging new opportunities.

enabling information technology is deployed, and new approaches to asset management are introduced.

During these two stages, the CIO's primary external interaction is with other business executives to make sure that information technology perspectives are included during the transformation. This ensures that the IT plan is integrated into the master plan so that all the business strategies contain an integral IT component. During the construction phase, the most critical relationships are with the individual who has emerged as the transformation champion and with the owners of the various business processes that are undergoing change.

Leveraged Investment

With the business transformation initiatives in place, the CIO resumes a more intense relationship with the CEO. This is because a successful transformation will do more than change existing processes; it will create a host of new business opportunities as well.

During the leveraged investment stage, the company seeks to extend the newly developed capabilities and create greater value for the firm. A proactive CEO will seize every opportunity to redefine the business and develop new opportunities. The CIO's role is to identify the infrastructure components necessary to support the new business ventures. Here is where the flexibility built into the IT architecture during the preceding two stages becomes vital to the CIO's ability to provide the capabilities needed to achieve the CEO's vision.

In a more proactive role, the CIO can act as an entrepreneurial partner inside and outside the company, iden-

tifying, justifying and leveraging new opportunities. In some cases, this may mean extending the company's sphere of influence beyond the original vision, a decision that obviously needs the firm agreement and support of the CEO.

Transformation: A Way of Life

In an environment where business transformation has become a way of life for successful companies, the CIO's role and, in particular, his or her relationship with the CEO will continue to change and grow. During our research, a few of the words we've heard to describe this new breed of IT manager are: "trusted consultant," "visionary," "an architect of enabling technology," "a partner with business executives and process owners," "an active change agent" and "innovator."

David Cox, CIO of Northern Telecom, put it this way: "The role of the CIO gives us a tremendous opportunity to effect change in the corporations where we work. The role has tremendous breadth, tremendous scope, and is, in fact, a critical success factor for the future of every business that I know of."

Speaking from the CEO's perspective, Louis V. Gerstner Jr., the CEO of IBM, commented, "The CIO profession is undergoing the same transition that the CFO profession did several years ago...from a specialist to a general manager role. I believe the CIO role will evolve in a very significant way into an executive committee role, as part of the senior team. Companies that make that evolution will have a competitive advantage."

During our studies, we have learned that business transformation is an ongoing process, not a final destination. The CIO must be prepared to begin the business transformation life cycle anew over and over again. By establishing and maintaining a positive relationship with the CEO during previous cycles, the burden becomes lighter and the road easier. **CIO**

Joseph Movizzo is general manager, IBM Consulting Group. Robert M. Howe is general manager, Finance Industry, IBM Corp.



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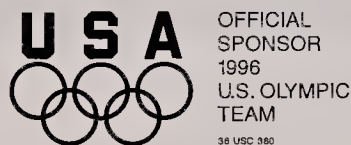
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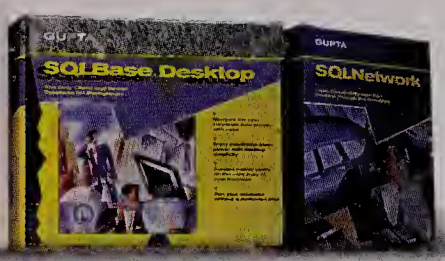
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Think Tank

BY TOM DAVENPORT

SAP: Big Change Comes in Big Packages

SAP IS NOT A SOFTWARE package—it's a way of doing business." "It's business integration in a box." These comments have emerged from managers and consultants who are implementing SAP AG's megapackage within large organizations. My own summary phrase for SAP would be this: "the world's largest experiment in business change."

A colleague and I have just wrapped up a research project on how companies implement the business changes associated with SAP. We called the project Holistic Management of Mega-Package Change. By "holistic" we mean not Zen, tofu or the Maharishi, but the broad-scale changes in strategies, structures, processes and cultures that have to accompany the rollout of SAP and the few other megapackages that are available. We interviewed senior executives at 20 companies to find out how—or whether—they planned and managed change holistically.

Well, the results are in. They don't. That's about it for my first *CIO* column.

But since I have some space to fill, maybe you'd like to hear about

why they don't as well as some interesting exceptions. One reason companies don't manage holistically with SAP is that they are dealing with an unprecedented level of systems integration, never mind business integration. They have to make more than 3,000 configuration decisions. Those using R/3 have to master major client/server, perhaps for the first time. And we all know by now that external expertise on SAP is hard to come by.

Some companies have intentionally minimized the technical challenges of SAP. Executives at Eastman Chemical, for example, adopted the R/2 mainframe version because they knew they could do it (although now they're getting nervous about vendor support for that version). The Seattle Times and Mrs. Baird's Bakeries installed a preconfigured, don't-confuse-us-with-choices version that was up and running in 90 days.

Holistic thinking should start with strategy, the professors say. SAP enables a strategy of tight coordination among sales, manufacturing, procurement, finance and accounting, even human resources—and allows global integration across geographi-

cal business units. If that's your strategy, you're in good hands with SAP; if not, maybe this system is overqualified for the job.

You might also ask your strategists how your organization will differentiate itself with an SAP-enabled strategy, particularly if you are in the chemical, personal computer, or heavy manufacturing industries where the package is *de rigueur*. If SAP supports 75 or 85 percent of the business, and everyone is doing that percentage of the business the same way, whence cometh your competitive advantage? You can easily see the strategic implications of SAP, and the money companies are spending on implementation (from \$50 million to a half-billion or so) is clearly strategic. Yet fewer than half of the companies we interviewed considered SAP a board-level issue.

Having flirted with reengineering in my youth, I was most interested in how these organizations handled the process changes associated with SAP. After all, a major benefit of the software is its reputed "enablement" of redesigned, highly integrated business processes (over 800 of them, according to the vendor). We've all known since Max Hopper was in kinder-



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INTERSECTION

MARCH 17-20, 1996
RITZ CARLTON - NAPLES, FLORIDA

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garten that you're supposed to design processes before automating them—first decide how you want to do business, and then apply technology.

But SAP makes that relationship do handstands. The more honest among our interviewees admitted that they were reengineering their processes to the degree necessary to get them to work with the software. Everyone agrees that modifying the highly integrated package substantially is a recipe for disaster, so how can you do otherwise? One unfortunate manufacturer went through a full-blown reengineering exercise and developed highly specific process visions and improvement objectives. Then the implementation team selected SAP, and the ambitious reengineering goals were subordinated to getting the system up and doing the work in accordance with the monster package's demands.

Then there is the issue of organizational structure and culture. Some companies seemed to have a childlike faith that SAP would change the way people think and act. "We've had a renegade culture in the past, with each person in each business unit believing they knew the best way. But SAP's going to change all of that," said one computer company manager. Yeah, wight, get a wife, as my 3-year-old used to say.

One oil company did realize that software doesn't change behavior, and it put in a new layer of organizational structure (which also doesn't change behavior by itself, but it does help) to oversee global common operations. A computer company, however, moved in exactly the opposite (and to my mind, wrong) direction. Shortly after the senior VP of worldwide operations began implementing SAP so that the company could do

business globally, the company decided that it would regionalize the management of operations and eliminated the SVP's position. Say what?

THERE WERE A FEW companies that seemed to be Doing It Right. Everyone kept mentioning Autodesk as the paragon of SAPdom. Sure enough, when we interviewed them, they seemed to understand the holistic nature of SAP and to be managing it well. President and CEO Carol Bartz had brought in Bill Kredel as CIO because he understood her global vision for the company. Kredel, who had managed several mega-package implementations in the past, chose SAP, with Bartz's blessing. They picked a few key processes that needed improvement and configured SAP to support the new process designs. Best of all, Autodesk has business results in the can: quote to ship in 24 hours vs. two weeks, financial close in six days rather than 12, a single worldwide operational database with executive information updates every 10 minutes.

Compaq also seems to have taken an exemplary approach to holistic management of SAP-related change. (Maybe it's too hot and

Holistic Medicine

If you are going to get the big picture on SAP-related change, you need:

- A very senior project sponsor (COO, division president, even the CEO)
- One consultant who can deal with all of the change issues seamlessly
- Cross-functional steering, design and implementation teams (ideally one team doing design and implementation)
- Simultaneous approaches to strategy, organization, process and systems change

humid in Houston to do anything but stay inside and figure these things out.) Adoption of the package was driven by John White, Compaq's vice president and CIO, but Eckhard Pfeiffer, the CEO, and the board of directors made the final call. SAP fit Compaq's business strategy well—it was moving from a strategy of build-to-stock to one of lean production and build-to-order, and it wanted to be able to source and produce at any of its facilities in the same way.

Compaq managers and their consultants knew that SAP hardly offered

a "clean sheet of paper" for process reengineering, but they didn't want to do business the same way everybody else did either. They concluded that a couple of processes—production forecasting and order scheduling—were critical to their competitiveness, and they couldn't afford generic solutions for them. Therefore, they are developing proprietary processes and systems in those areas and interfacing them with SAP.

On the cultural side, White notes that Compaq was never a company of renegades, and there were only a few key ways of doing business around the world. But it doesn't take global common processes and systems for granted. The implementation team has representatives from all around the world. Each member is asked to bring his or her country's flag. After discussing a way of doing business or of configuring the system, the leader says, "Raise your flag if you agree." If all flags don't go up, then more work is necessary to build a consensus.

Neither Compaq nor Autodesk is finished with its SAP work. In fact, when it comes to SAP, "implementation completion" may be an oxymoron. Both companies were surprised at how difficult the package is to implement and how long it's taking. But they recognize that the changes it brings about require significant management attention.

Holistic management is a collection of little things that together yield a big result. If you can't deal with all of these changes at once in the entire organization, it's better to deal in an integrated way with a part of the company than to adopt piecemeal changes everywhere.

SAP is a masterful hunk of software functionality, and I hope this grand experiment succeeds for the good of our economy and the IT industry. But "holistic or not, here we come!" is an attitude that we can't live with. **CIO**

Thomas H. Davenport is a professor and director of the Information Management Program at the University of Texas, Austin. He welcomes comments at: TDav@notes.bus.utexas.edu.

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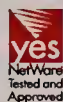
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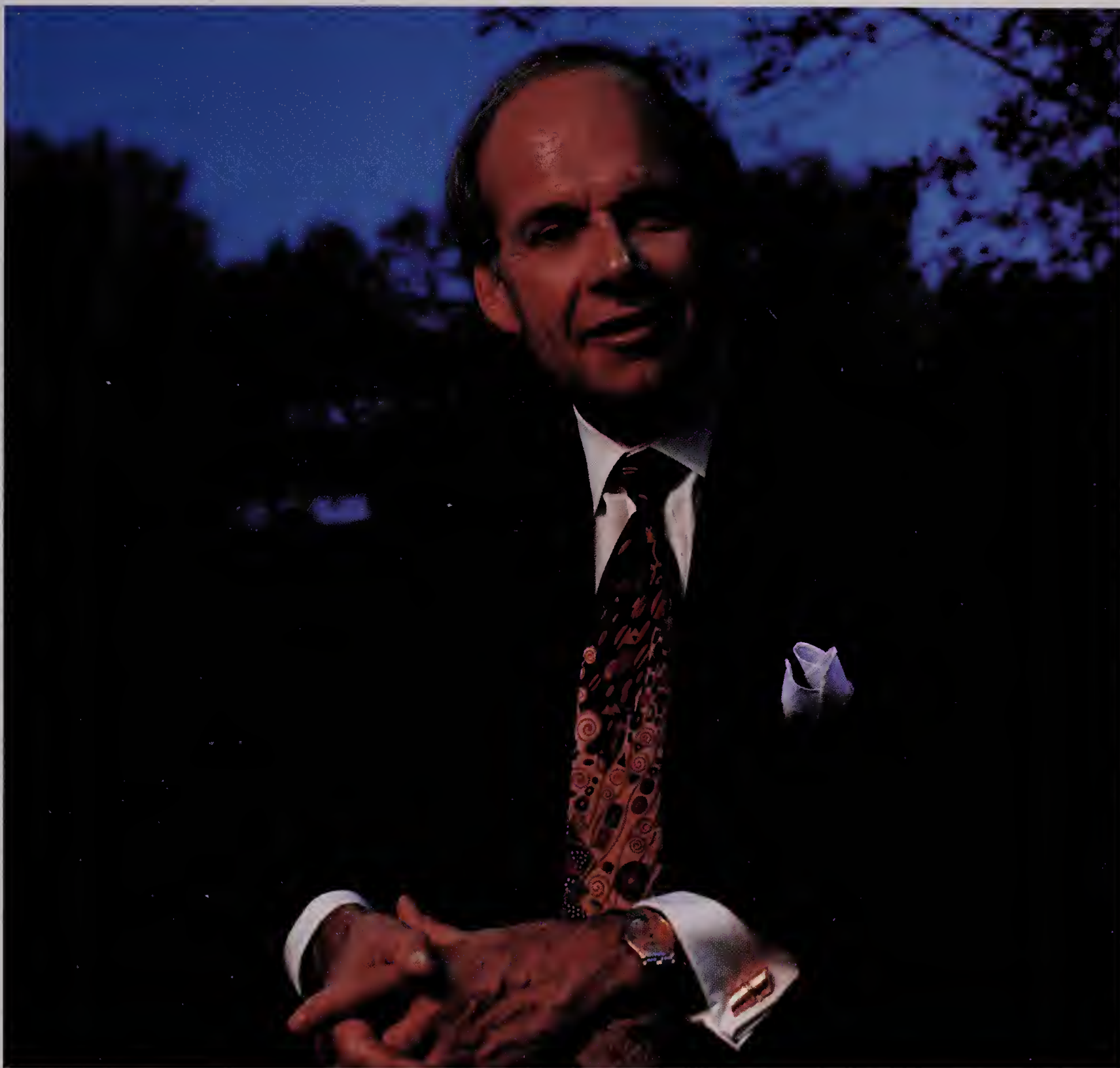
PERCEPTION IS Reality

If a customer of the IS group isn't happy, it doesn't matter how dramatically uptime is up or how consistently I/O is OK. Since most problems are in the eye of the beholder, IS needs reliable ways of seeing itself as others see it.

LIZ McCLELLAN USED TO THINK THAT FRIENDLINESS was the key to satisfying end users. "When calling our help desk, we figured our customers felt it was important to talk to friendly people with good phone demeanors," says McClellan, who, as business systems leader, customer service, at Johnson Controls Inc. in Milwaukee, supports 250 desktop end users, 2,500 telephone users and a few thousand mainframe users. However, a survey proved that end users have a more utilitarian view of good service. While they may appreciate a friendly voice, McClellan says, what they want most of all "is to have someone on the phone who knows what they're talking about."

It didn't take McClellan long to learn the first rule of customer satisfaction: Never assume that your customers want what you think they do, or what you think they should.

BY MEGAN SANTOSUS



Take operational metrics, the traditional yardstick by which IS measures its performance. Suppose servers are up 98 percent of the time. CPU utilization isn't even close to maxing out. Throughput and I/O on the mainframe are setting new benchmarks. And calls to the internal help desk continue on a downward trend.

These are the top-notch metrics IS departments dream of achieving. But before you pat your IS department on the back, you should realize that there is more to excellent customer service than near-perfect uptime. The operational statistics on which you base your conclusions may not tell the whole story or even reveal common end-user dilemmas.

Here's a second rule of customer satisfaction: The reputations of help desks are made,

not born. Say you're an accounts payable manager who just received the latest version of Microsoft Excel. You're having trouble exporting cells into a Word document, so you call the help desk. You wait on the phone listening to Muzak for what seems like an eternity. Then a brusque-voiced tech gets on the line and instructs you—in a manner both condescending and incomprehensible—how to accomplish your task. The conversation lasts all of five minutes. The tech unceremoniously hangs up and logs the problem as closed. Only, you're more confused than before. You think of calling Microsoft. Maybe you'll ask an experienced Excel user in accounting. If you're really desperate, you'll consult the manual. You decide never to call the help desk again, and you share your fruit-

LEN TENNER: *Don't get blinded by performance statistics. Operational metrics sometimes ignore disgruntled users.*



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LIZ McCLELLAN:
Problem resolution can take longer because users are now requiring a higher level of expertise.

less, frustrating and humiliating experience with your colleagues.

Operational metrics ignore many similarly disgruntled customers. Yet the help desk people will never know it. From their perspective, problems are resolved quickly, the phone is not ringing off the hook and end users from entire departments have seemingly dropped off the face of the earth. Everybody's happy.

Don't believe it, cautions Len Tenner, chief information officer at Hewitt Associates LLC, a human resources consulting firm based in Lincolnshire, Ill. "You can get blinded by performance statistics and not have a clue as to what's going on," he says. "To users, the screen is the system, and if they can't work with it, for any reason, they don't care how reliable the server is."

Another problem with statistics is that they don't always correlate with end-user experiences. At Johnson Controls, the dura-

tion of calls to the help desk is increasing as users become more sophisticated. "People don't call us to find out how to open or close a window anymore," says McClellan. "They want to know how they can dynamically link spreadsheets to PowerPoint, add some animation, have color graphs or any number of things that are a lot more complicated and require a higher level of expertise." Problem resolution often takes longer, but it's not indicative of the quality of service end users receive, according to McClellan.

The move away from relying on operational data has an end result that may not sit well with many CIOs, says L. Paul Ouellette, owner of Ouellette & Associates Consulting Inc. in Bedford, N.H., and author of the book *I/S at Your Service*. "More and more, the contribution of the IS department is based on the soft side of the equation," he maintains. For IS, this means paying attention to the expectations and feelings of end users—just the kind of perceptual data that is neither easy to collect nor to measure. Tracking performance stats and help desk calls is fine for troubleshooting or putting out fires. But IS departments that aspire to be full-fledged business partners have to take a proactive approach to end-user satisfaction.

If operational data can't paint a clear picture of how IS is doing, what about surveys? Unfortunately, most surveys—especially the kind conducted annually that ask end users to rate IS services—have limited usefulness. For one thing, they don't provide immediate feedback, so the results end up skewed to the most recent—or egregious—experience. While satisfaction, as defined on a 10-point scale, is a barometer of performance, ratings don't give a clue as to what can be done to improve satisfaction levels.

"Most surveys are not timely and don't provide any insight into how much value IS contributes," says Joseph P. O'Leary, partner in charge of the customer satisfaction practice at Arthur Andersen in New York.

Brown & Root Inc., a construction and engineering firm based in Houston, hires consultants to design surveys in an effort to elicit useful, actionable information. For example, one question in a recent survey asked end users if they were satisfied that they could do their jobs with their current PCs. About 20 percent—mostly engineers and project managers—responded that they

Home Depot's Andrew Delany believes that "an employee with a systems problem should be treated just like a consumer returning a lawn mower."

needed more horsepower.

"We want to take concrete action based on the survey," says Thomas A. Jones, Brown & Root's information technology regional manager/America. "So, we're considering upgrading specific workgroups of people who aren't happy." This doesn't mean that every disgruntled engineer will get a gleaming new Pentium machine just for the asking. But the survey results do provide Jones with a starting point from which to evaluate needs and perform upgrades where necessary.

One of the major challenges in keeping users happy, says Hewitt's Tenner, is that most organizations have evolved from a mainframe-centric environment. Diagnosing and solving problems in an architecture comprising servers, networks and peripheral devices can be like finding a needle in a haystack. As client/server technology pervades increasing numbers of organizations, it's unrealistic for end users to think that significant problems will no longer occur, according to Tenner.

It behooves IS, he believes, to change customer expectations. When Hewitt moved development from a mainframe to a LAN-based system and experienced problems with servers, end users were upset because they felt recovery was too slow. "The end users

didn't understand why problem resolution required more than flipping a switch," Tenner recalls. "I explained that the desktop software—particularly the operating system—was not as robust as it was on the mainframe. We talked about the pieces of the whole architecture, and they accepted that things weren't going to be the same as before."

THE CHANGING ECONOMICS THAT accompany the shift to distributed computing are driving a new customer service consciousness. Where end-user support is often a larger portion of the average IS budget than equipment, customers and managers who approve budgets will increasingly judge IS on the level and quality of service it delivers.

That's a far cry from a time when IS preferred neither to see nor hear from end users. "IS has to deliver value to customers as defined by the customers," says O'Leary.

Sounds a lot like the way successful companies deal with their external customers. In fact, some companies make no distinction between internal and external customers. At Home Depot Inc., a retailer based in Atlanta, the help desk is expected to demonstrate the same service ethic as sales associates in the

Study Guide

Whether a customer survey succeeds or fails depends on whom—and what—you ask

It's not enough simply to survey end users; you have to ask them the right questions. So says Jonathan W. Siegel, senior project director at Gordon S. Black Corp., a market and public-opinion research firm that specializes in measuring customer satisfaction. Siegel, who is based in Rockville, Md., recently helped the information systems and services group at Texas Instruments Inc. get a better handle on end-user satisfaction by breathing new life into customer surveys.

According to Siegel, developing surveys that target the right issues is only possible if you recognize that there are three distinct customer constituencies, each with its own expectations, needs and agendas.

Take a company's top management, which counts the CEO and CFO among its members. "This level is primarily concerned with how IS is helping the organization achieve its corporate mission," he says. "All they want to know is whether IS is succeeding or failing, and the best way to find out is for IS to conduct personal interviews with members of the management staff." For best results, Siegel recommends asking open-ended questions.

As for mid-level managers, personal interviews and surveys are fine as long as both strategic and end-user issues are covered. These folks, broadly encompassing business unit or department heads, are

familiar with the corporate direction and have a sense of what's going on with end users. "Mid-level management knows the mission, but they are also aware of whether people in their departments know how to use the software," Siegel explains.

End users are in the best position to comment on how well software works, what other functions would be nice to have and how IS affects their job performance. Surveys, conducted either by mail or telephone, are best for these constituents. Just don't ask them to rate satisfaction levels, Siegel advises. "With rating, people feel obliged to give consistent marks," he says. "Ask questions about specific events, like whether the printer broke down in the past year and whether it was fixed within a few hours." The goal, says Siegel, isn't just to find out what customers think; it's to get feedback that IS can turn into action. —M. Santosus

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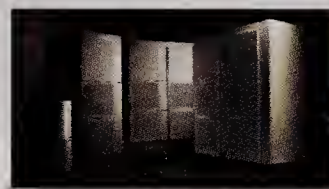
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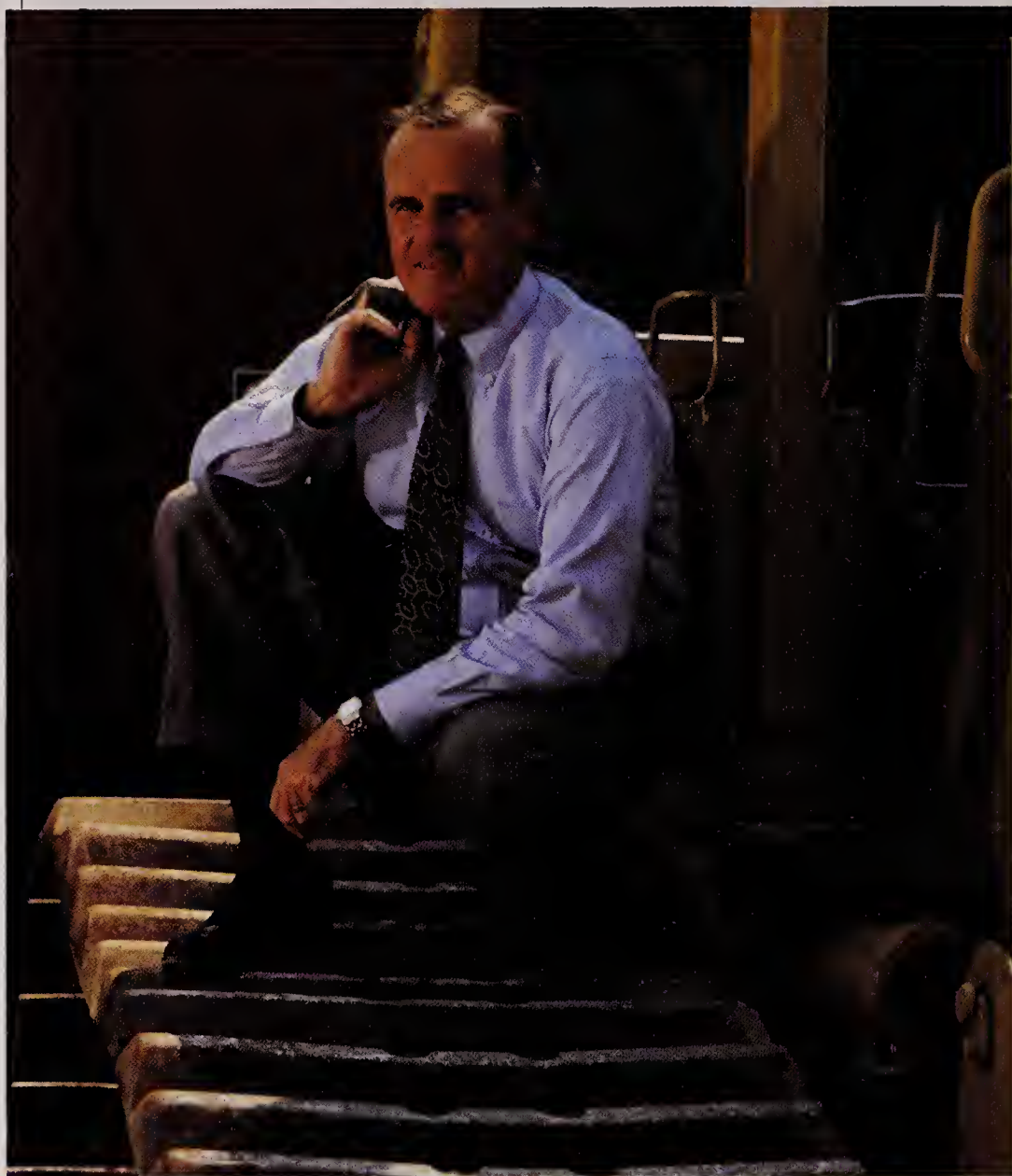


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THOMAS JONES: *Survey results provide a starting point from which to evaluate needs and perform upgrades where necessary.*

company's 381 stores. "An employee with a systems problem should be treated just like a consumer returning a lawn mower," says Andrew Delany, Home Depot's help desk manager. "Our job is to make each help call a pleasant, nonthreatening experience," giving users prompt and accurate advice as well as friendly service.

MAI Systems Corp., an Irvine, Calif.-based provider of software and services to the hospitality and manufacturing industries, has one toll-free help-desk number that handles calls around the clock from anyone with a problem, whether they are internal or external customers. Reps differentiate between the two only after they answer the phone and log in a customer identification number. The company firmly believes that providing good support to its 500 employees has a direct impact on its overall performance. Says President George Bayz, "If we're not serving our inter-

nal customers with the same level of professionalism that we provide to our external customers, then our IS group isn't doing its job."

The IS group at Texas Instruments Inc. (TI) realized the importance of perceptions a few years ago, says Dan Murphree, director of information technology strategy, processes and resources at TI's facility in Plano, Texas. "When we shared our internal operational metrics with our business unit customers, we'd be met with a sense of disbelief," he says. The problem: a disconnect between what the metrics indicated and what users experienced. "To improve satisfaction levels, we had to understand how our internal customers at our business units view us," he adds.

Consequently, the information systems and services (IS&S) group revised its end-user survey processes in 1993. To gauge how business unit management feels at TI, members of the IS&S group regularly conduct structured one-on-one interviews with senior managers.

The intangible ROI from this sort of initiative is incalculable. For example, Mike Cooney, TI's vice president of defense systems and electronics groups, was impressed when Senior Vice President and CIO Jodie Ray personally conducted an interview last year. "He wanted to spend some time with me to find out what I was thinking and what my department needed," Cooney recalls. "It's a real strength when a service organization like IS&S is proactive in seeking customer satisfaction."

According to Murphree, one of TI's key discoveries in assessing internal customer service was to recognize that the perceptions of a desktop end user are likely to be very different from those of business unit managers. "Desktop users are most concerned with specific applications and capabilities," he says. "Business unit managers, on the other hand, are more cost-conscious and in a position to assess the value and benefits that IS&S brings to the business."

So, in addition to its end-user surveys, IS&S also queries senior managers on eight different quality areas, such as perceived value, costs, communication and total satisfaction. Results are analyzed quarterly, with an emphasis placed on finding patterns and taking follow-up action. Data from inter-

"For us, internal satisfaction is important because we bill time as our revenue base. An unproductive person costs us real dollars."

—Len Tenner

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"If we're not serving our internal customers with the same level of professionalism and dispatch that we provide to our external customers, then our IS group isn't doing its job."

—George Bayz

views and surveys is entered into a home-grown database built with Microsoft Access. The system is not very sophisticated, says IS&S Total Quality Director Gary Pollard, but it's good enough to do the job.

Operational statistics are still useful in diagnosing problems, but they don't provide information on how effective systems are for the end user. Nor do they measure

how effectively IS contributes to the mission of the business. In an interview with one senior manager, Pollard happened to notice that desktop system response time was too slow. "I was showing her how to perform a transaction on the desktop, and we waited for what seemed like 10 to 20 seconds for a response," Pollard says. "I couldn't believe it when she told me that the system was always that slow."

After the interview, a call to operations confirmed that there was a systemic problem; operations traced the glitch back to a faulty controller, which was promptly replaced. "We rely on customers to tell us when they have problems,"

he says. "But sometimes, as in this case, people just don't know to call the help desk." That's why meeting with customers on their own turf is the most effective way of finding out what's really going on.

For Pollard, the essence of customer satisfaction is finding areas with room for improvement. And he believes there is no better way to do this than to sit down and talk to the customers. "We have to be willing to ask what we're doing wrong or what we could do better," he says. This is often counterintuitive to IS groups, he acknowledges. After all, few people like hearing about where and how they fall short of customer expectations.

WITH SERVICE MEASURED less by operational statistics and more by softer, perceptual criteria, IS does have to work harder at justifying the costs of customer initiatives. As with improved productivity, how does IS put a price tag on providing better service to end users? For Hewitt's Tenner, validating the help desk and other customer satisfaction initiatives is somewhat easier than at other

companies. "For us, internal satisfaction is important because we bill time as our revenue base," he explains.

But for other businesses, the fruits of such initiatives are not so easily envisioned, according to Jones. Brown & Root's executive management team wanted concrete proof of the benefits likely to be achieved by providing better customer service. "There's a hidden cost when knowledge workers resolve IS problems by going to the person in the next cubicle," he says. "Even if we invested \$1 million in a first-class help desk, we couldn't convince management that the company would realize any tangible savings." In other words, an increase in productivity wouldn't show up anywhere on the books.

Jones didn't win management over by arguing about lower costs or better service (although he attempted that approach at first). Instead, before Brown & Root established a help desk in 1992 to provide centralized support to 40,000 worldwide employees, he sold management on the link between better service and continuous product improvement. "The quality process is totally ingrained in our culture, so managers could relate to that," he says. "By analyzing calls to our help desk and seeing where people have recurring questions or problems, we can recommend training programs or detect software problems." Proactively solving issues results in lower training costs and better systems, says Jones.

As for help desk tools, the consensus seems to be that existing technologies are useful but can't provide IS with the kinds of feedback that are most beneficial. "The biggest problem is that we're working in an area that's more art than science," says Hewitt's Tenner. "It will be the year 2000 and beyond before we get the tools and techniques to run the place." Ideally, Tenner would like to see tools that diagnose problems—and dispatch staff to fix them if necessary—without human intervention.

Even when such tools materialize, most observers say, IS personnel will still need to walk the floors to see what's up with customers. Imagine, again, that you're that hapless manager in accounts payable. At the end of the day, spent with frustration, you're ready to throw your keyboard out the window. If an IS rep happened to walk by and talk you through the wonders of spreadsheets, your day—and the reputation of IS—would be redeemed. 

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First Port of Call

BY RICHARD PASTORE

KOOS ISEGER (left) and **KOOS VAN DER STEENHOVEN** are leveraging IT to improve overall efficiency in the Port of Rotterdam.

With economic storm clouds on the horizon, the Port of Rotterdam is battening down the hatches against competition from other European harbors. A program to promote IT innovation among third-party port service companies may just be the anchor Rotterdam needs to secure its status as the world's largest commercial port.

IN THE SPOTLIGHT

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EDITOR'S NOTE: *The Port of Rotterdam is the first profile in our European Spotlight series, which will focus on Europe-based businesses dealing with IS challenges particular to continent and country but universal in relevance.*

With 44 percent of Northwest Europe's goods traversing Rotterdam's harbors, the port is the main artery for the region and a crucial component of the Netherlands economy.

the port is the main artery for this region. And not surprising, it's a crucial component of the Netherlands economy, pulling in 54 billion guilders (\$35 billion U.S.) in 1994, or 10 percent of the country's gross net income.

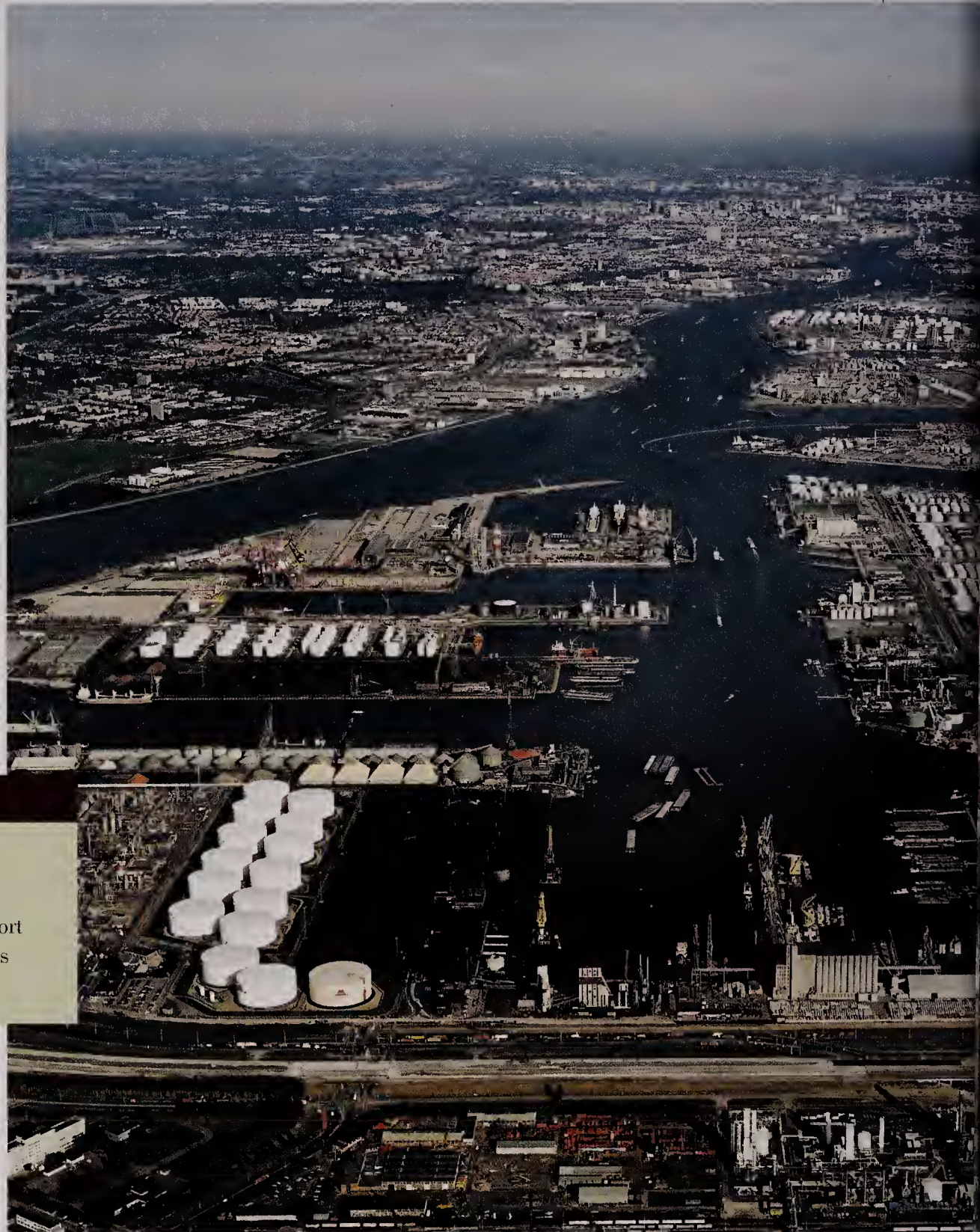
But economic doldrums have slowed the growth of European trade, and the port faces fierce competition for existing business with eight other regional harbors. This has spurred Plan 2010, a program to

BUSINESS CHALLENGES

- Retain and enhance leadership position despite flat European economy
- Improve efficiency and effectiveness of port operations to create more attractive business environment than rival European ports

retain and strengthen Rotterdam's position through a 15-year investment of 100 billion guilders, a significant portion of which will be directed toward information technology innovation. (For more information, visit the port's Web site at <http://www.MediaPort.org/uk/port/port.html>.)

For IS, the biggest challenge is to improve overall port efficiency and competitiveness by stimulating IT use among the thousands of independent firms that patronize the port or provide services there. The few large companies that are intensive IT users, such as Shell Oil Co. and Europe Combined Terminals (a freight container-handling firm), have it all together technologically. But there are some 12,000 smaller port operating companies—truckers, traders, stevedores and forwarding agents,

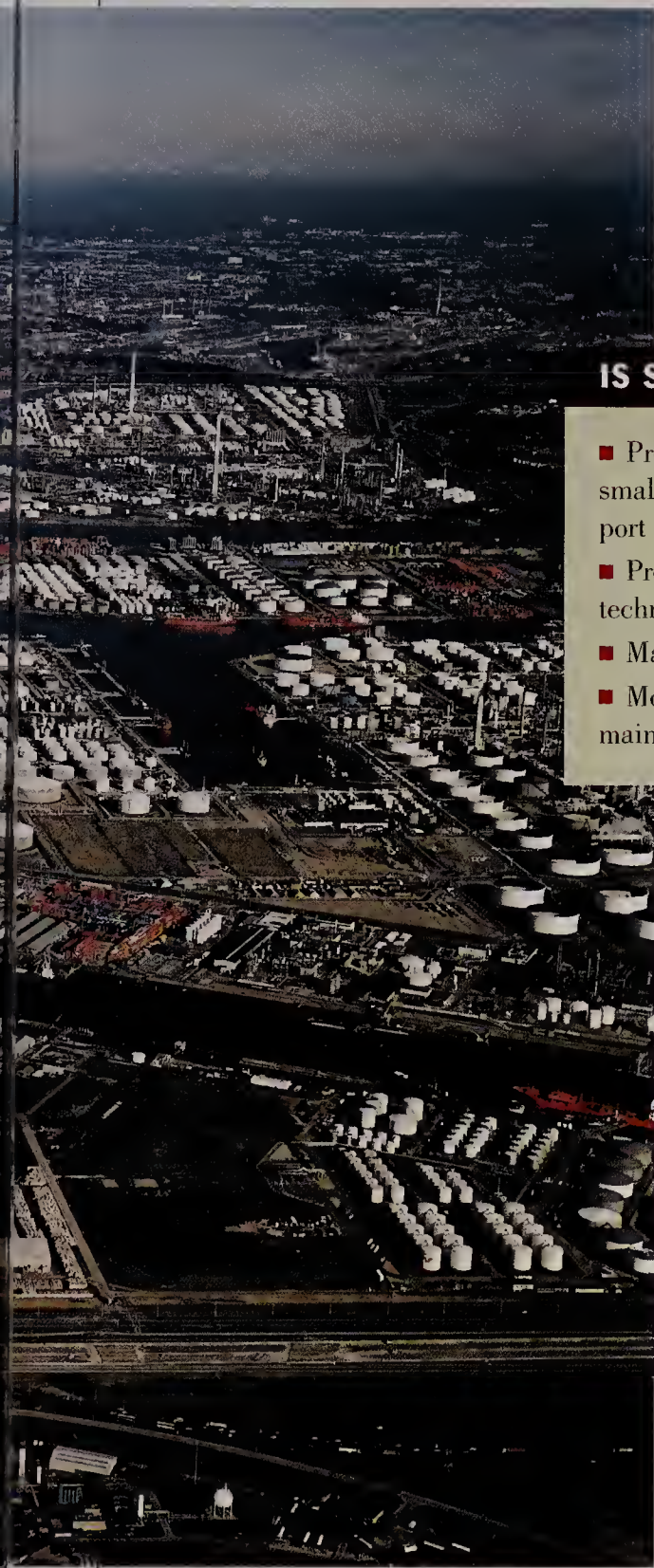


ROTTERDAM'S PORT operates on the edge between a government agency and a private company.

ranging in size from five to 500 people—that underutilize IT and threaten to compromise Rotterdam's overall competitiveness.

"Port business is becoming very dependent on quick information exchange between the companies," particularly for shortening handling times, explains Koos van der Steenhoven, the port's executive director of strategic planning and research. "The smaller firms don't invest enough in EDI and IT and are not prepared for the information era that is coming."

To spearhead the effort to better leverage IT, the port decided two years ago to hire its first central IS authority. Port management wanted to fill the post with someone who knew the IT marketplace and had the necessary strategic vision, so they wooed Koos Iseger away from IBM Corp.'s Dutch systems integration business, agreeing to match his IBM salary—which was significantly higher than a typical municipal IT director's pay. "Because he had worked more than 25 years for IBM in very



Nice," *CIO*, February 1992).

Ships bound for Rotterdam with dangerous cargo are required to notify port authorities of their payloads, traditionally accomplished by telex, fax or ship-to-shore telephone. A year ago, port management began asking for notification via EDI in or-

IS STRATEGIES

- Promote increased use of technology among small and medium-sized firms operating in the port via consulting programs and education
- Promote cooperative use of communications technology among third-party port companies
- Mandate use of EDI where possible
- Modernize port management systems to cut maintenance costs

der to reduce errors, and it has since declared that as of January 1996, it won't accept any other kind of announcement. About 50 percent of inbound ships were using EDI as of August 1995.

The problem with using the stick approach too widely is that shipping and service companies enjoy unparalleled independence in the open, free ports of Holland. This tradition of freedom dates back to the 17th century, when Dutch merchants grew wealthy and powerful trading across Europe and in the Dutch East Indies. Today, Rotterdam's municipal port authority is consigned to traffic control, environmental policing and infrastructure management. By contrast, the Singapore government runs most of its port operations itself, which makes it easier for authorities to introduce IT efficiencies, Iseger notes. "Because of that, they are further ahead in the usage of IT." (See "Computer Land," Page 6, *CIO*, July 1988.)

Though it might wish to, the port of Rotterdam can't very well dictate EDI use among third-party companies. But intercompany IT cooperation is essential to the prosperity plan of the port, where, for example, a trucker's efficiency depends on the efficiency of the stevedore who prepares his load. "Our main challenge is making these companies cooper-

ate," Iseger says. "It's difficult because they all have different interests."

One initiative that is bringing about cooperation is the Cargo Card system. Under this pilot program, 10 participating trucking companies use EDI from their offices to alert the port's container terminal when drivers will be arriving for freight pickup or drop-off. Terminal authorities use the advance notice to pull and prepare the necessary customs paperwork. When the driver arrives at the terminal gate, he presents his personalized smart card for identification, reducing the chances of impostor fraud. When fully operational, the computer chip in the smart card will electronically download bills of lading and customs information, further reducing paperwork delays. Also, the advance EDI notification will allow container-handling companies to prepare the appropriate

"Port business is becoming very dependent on quick information exchange between port operating companies. The smaller firms don't invest enough in IT and are not prepared for the information era that is coming." —Koos van der Steenhoven



responsible positions, we were very glad to have him here," says van der Steenhoven, Iseger's boss. "We see him as a leader in bringing innovative developments to the port."

Iseger and company are using a carrot-and-stick approach to promote IT use within and among port companies. The stick, in this case, is to mandate EDI, a technique familiar to many U.S. retailers and manufacturers that forced its adoption in the late 1980s and early 1990s (see "The High Price of

freight for pickup ahead of the truck's arrival. "It will be possible to bring [the trucker] just in time to the terminal and let him leave a few minutes later," van der Steenhoven says.

According to Cargo Card pilot participant Win Ammerlaan, the system has cut in half the average one and three-quarter hours his company's trucks spend at the terminal and eventually will pare waiting times to 15 to 20 minutes. Even for a small

company like Ammerlaan Transportation VOF, whose trucks make 50 to 55 stops at the port each day, the aggregate time and money savings will be tremendous.

The pilot program has already made rival ports look less attractive by comparison—its ultimate goal. “I haven’t seen anything like this at Hamburg, Antwerp, Bremen or Le Havre,” says Ammerlaan, whose Maarssen, Netherlands-based firm does business on a limited scale with these other harbors. Antwerp (Belgium’s largest port) provides computer terminals at the gate, so truckers can fill out their paperwork electronically. But since Antwerp doesn’t offer advance notification, the Cargo Card system is more efficient, Ammerlaan says.

For companies that have little IT infrastructure or limited knowledge bases of their own, Rotterdam has sponsored a free technology consulting project—a carrot approach—called the MISTER program. MISTER (a Dutch acronym) uses municipal money to fund an external consultant who reviews port companies’ communications technology and recommends enhancement possibilities. “The companies had been reluctant to go to a large consultancy themselves because they didn’t know how to judge a consultant’s proposal,” Iseger says. His project manager acts as a liaison between the company managers and the consultant.

Cargo Card user Ammerlaan Transportation is also participating in MISTER, leveraging the free consulting to study its mobile communications. “One of our biggest problems is communicating with our trucks,” Ammerlaan says. Relaying detailed container numbers and locations to truckers by

Another of the port’s IT innovation programs, one with a longer-range payoff, is a joint education improvement effort with Rotterdam’s Erasmus University. To enhance the IS component of the school’s general business education program, the port put together six case studies exemplifying strategic use of IT in major

“Our main challenge is making the companies that use or service the port cooperate.

It’s difficult because they all have different interests.”

—Koos Iseger



Dutch companies such as Heineken.

Ammerlaan, for one, praises Rotterdam’s recent efforts to improve the IT lot of its port companies. “They are doing a very good job of making the port more attractive for the small companies, not just for the big [international] shipping firms,” he says.

Despite the early kudos, the port can’t expect to be a technology inspirator if its own systems aren’t shipshape. Toward that end, Rotterdam is investing in a three- to four-year modernization of the integrated Vessel Traffic Management System (VTMS). The 24-hour-a-day system provides traffic controllers with a complete overview of traffic in the

lects this data and makes it available via local and wide area networks to 120 user stations in a 62-mile span. VTMS also feeds data to other port-authority systems, such as Water-depth Management and Dangerous Goods, and plans call for links with shipping agency systems and the traffic management programs of other ports and inland waterways.

Although the software for VTMS has been updated over the years to remain technologically current, the hardware is circa the 1960s and ’70s. Old equipment from Philips Electronics and others is no longer supported by the vendors. Iseger’s goal is to replace much of the hardware with more flexible, less costly Unix-based systems. The port anticipates paying for the 25 million guilder upgrade with the resulting maintenance savings alone.

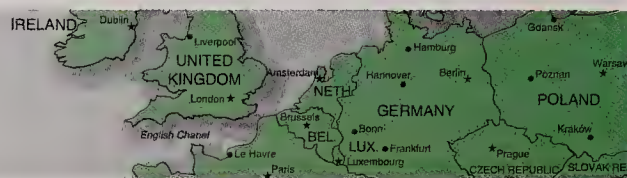
Though the main goal of Iseger’s IT initiatives is to make the port more attractive to customers, some will also improve the port’s cash flow. For example, Rotterdam plans to reap monetary returns when it switches over to EDI for the billing of ships’ dues later this year. Instead of mailing out docking-fee invoices to shipping firms, the port will bill them electronically, reducing errors and speeding payment turnaround. The cumulative rewards could be substantial, considering that a typical oil tanker must pay Rotterdam the equivalent of \$200,000 for three days in dock.

One might expect that strategy captains like Iseger and van der Steenhoven would be frustrated by their lack of dictatorial license and the political ballast typical of public sector organizations. But Iseger discounts that perception in the case of Rotterdam. “This port really operates on the edge between a government agency and a private company,” he says. “It’s as flexible as any large company.” That flexibility will surely be needed as Rotterdam continues building IT lighthouses to guide ships to a more efficient harbor. **CIO**

Richard Pastore can be reached at pastore@cio.com.

COMING UP

European Spotlight: Germany’s Volkswagen Group.



mobile phone has proven error prone. As an alternative, the company is considering the costs and paybacks of equipping trucks with wireless computer terminals.

port as well as historical data on sea-going ships. A data-handling system comprising a fault-tolerant Stratus Computer Inc. relational database server and a Sybase Inc. DBMS col-



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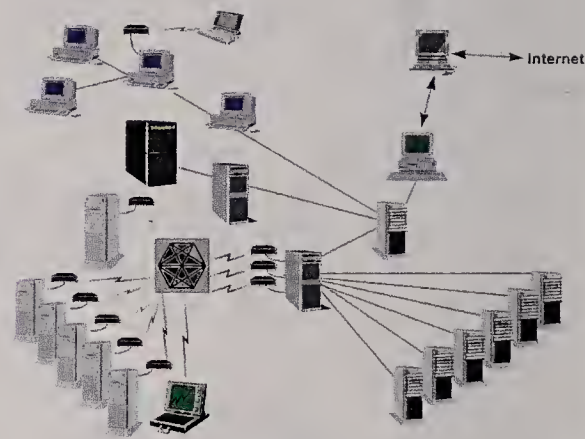
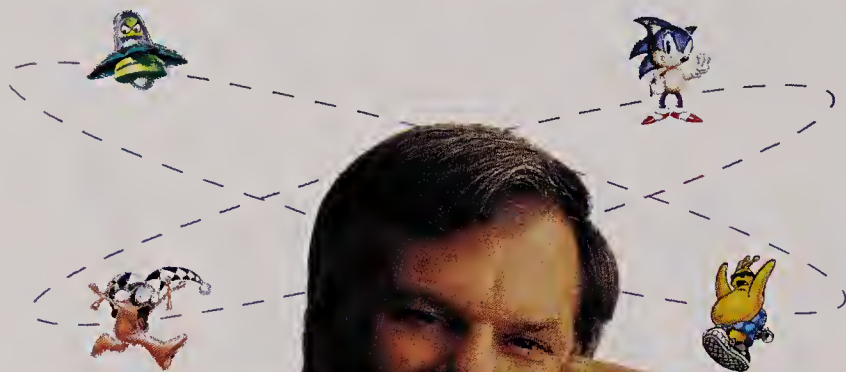
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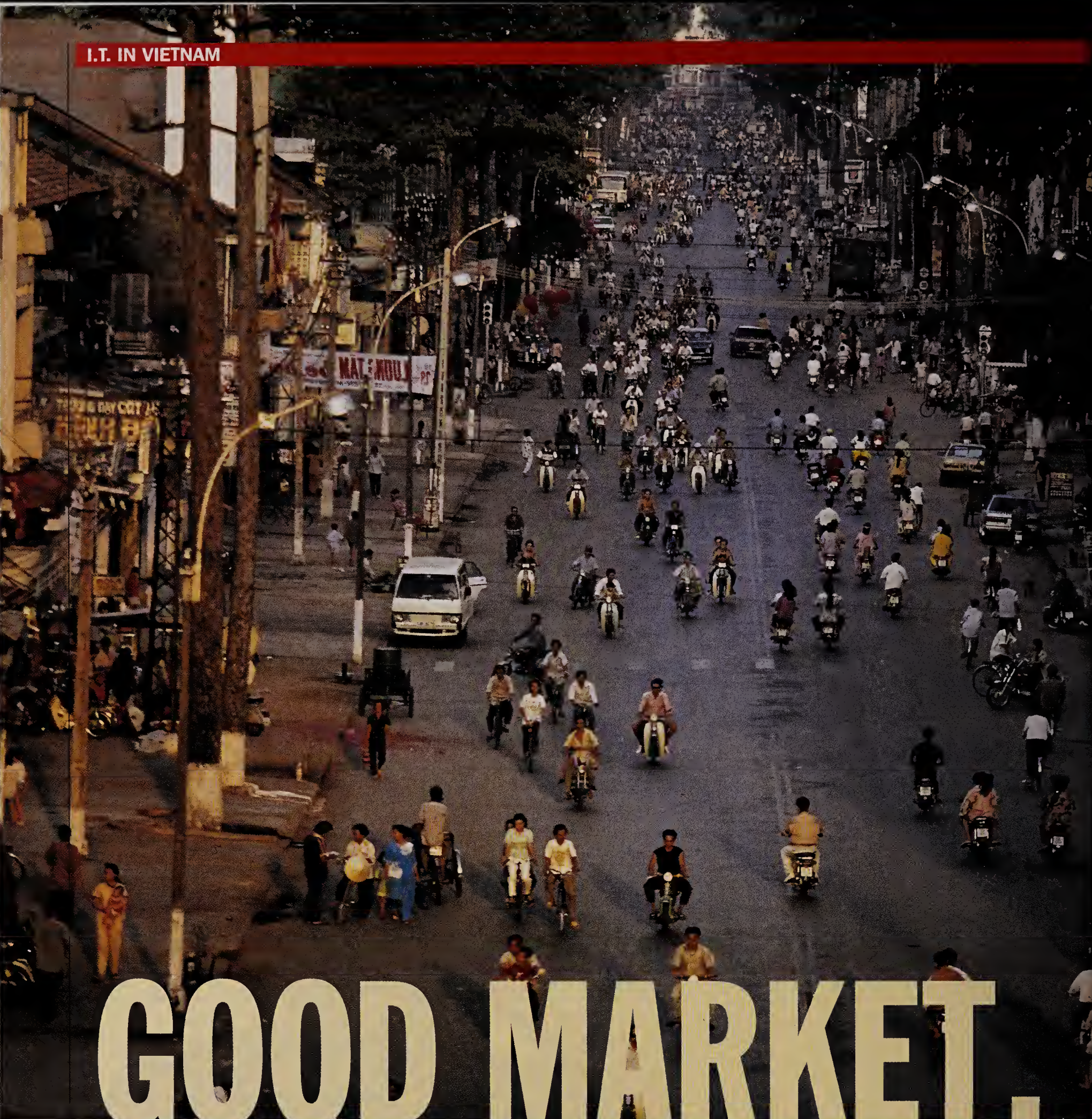
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I.T. IN VIETNAM



GOOD MARKET, Vietnam



Vietnam is widely viewed as one of the hottest global markets emerging today. The country currently faces a multitude of political, technological and infrastructural limitations, but for companies willing to tackle the resulting challenges, the rewards can be many.

BY LYNDA RADOSEVICH

EILIF HANSSEN IS A CONGENIAL guy. Hanssen, a finance and planning manager for International Beverages Co. (the Vietnam-based joint-venture bottling operation in which Pepsi-Cola International holds a 30 percent stake), knew he had to have the support of his local business partners last year before launching a comprehensive new information system. That's pretty standard. But he also shrugged off the one to two months he waited while a Vietnamese government ministry reviewed the system plans. And the ministry's insistence that he make minor changes to a couple of software modules because they employed accounting techniques not yet used in the communist country. And the 30-day wait to get a visa to send technology managers abroad for badly needed systems training.

"They were very cooperative," Hanssen says, impervious to all the government interference.

As a seasoned executive for Pepsi-Cola International, Hanssen knows that spending time assuaging bureaucrats is a simple fact of doing business in a developing country. (In order to open up shop in Vietnam, foreign companies must partner with Vietnamese-owned ones; IBC was bought into by Pepsi so it could enter the market.) IBC's air-conditioned offices in Ho Chi Minh City provide relief from the damp, sweltering heat and incessantly honking motorbikes outside. Inside, Hanssen shares his other secret for staying cool: Anticipate bureaucratic intervention and build extra time into project cycles. "As long as you plan for it, it's not an obstacle," he says.

A year and a half after President Clinton lifted the 19-year-old trade embargo on Vietnam, multinational companies



such as Pepsi are operating branches in what some experts believe is a most promising emerging global market. Vietnam is rapidly opening up to foreign investment, and the macroeconomics look good. Its 73 million people make it more populous than England or France. Seventy-five percent of the population is under 35, offering youthful workers and consumers. Its literacy rate of 88 percent is one of Asia's highest, despite a per-capita income of less than \$300. Inflation is under control, and the economy grew at an annual rate of 7 to 8 percent over the past three years, compared with 1.3 to 2.7 percent in rich, industrialized countries. To top it off, the country has oil and gas reserves.

"You're not going to do much better anywhere in terms of potential and capabilities of the workforce," says Roger Leeds, managing director of Barents Group LLC, a subsidiary of KPMG Peat Marwick in Washington that specializes in emerging markets.

Still, Vietnam is an impoverished, communist state with nascent capitalist support mechanisms. Market concepts such as cost versus price and supply and demand are new, particularly in the north, which has had a socialist-style planned economy for more than 40 years. Banking and accounting systems, although currently under reform, were built for a planned economy, not a free-market one. The country's infrastructure is still shattered from decades of war. Pulling together the vital telecommunications and information technology services to support business operations in this environment requires Pepsi-style fortitude.

Some support issues are common to many developing nations, so a look at



The U.S. Embassy in
Hanoi opened Feb. 3.
7 Lang Son St., Hanoi
844 236-050.
The embassy of the
Socialist Republic of
Vietnam is located at
1233 Twentieth St. NW,
Suite 501,
Washington D.C. 20036,
202 861-0737,
Fax 202 861-0917.



Vietnam illustrates the challenges of opening shop in any emerging market. These problems include high voice and data telecommunications costs and limited service, lack of local technical expertise, and language and cultural barriers.

Other obstacles are specific to Vietnam, with its unique combination of Asian heritage, socialism, poverty, literacy and high ambition. For instance, Vietnam has a mind-boggling bureaucracy and a domineering government that is bent on the clashing goals of building free markets and retaining centralized control.

Just ask Alfonso DeMatteis, chairman of the Hanoi chapter of the American Chamber of Commerce, about wading through government mud in Vietnam. "The bureaucracy stinks," says DeMatteis, who also runs a construction firm. "Why should it take six months to get a permit to invest millions of dollars here?"

Why indeed? Some say Americans have more trouble establishing the necessary relationships with all-powerful bureaucratic officials because of language and cultural differences. For instance, Americans often breeze into town, shake a few hands and expect deals

to be signed. But that's not how it works in Vietnam, or in Asia in general. "In negotiations, you have to be willing to take time, drink tea and meet on a regular basis," says Michael R. Doyle, Vietnam country manager for the Barents Group in Hanoi.

Installing a native-speaking operations manager can help smooth over differences, but it's no panacea. For instance, Nhan Luu is a Vietnamese by birth who moved to the United States in 1974 for schooling (and became an American citizen in 1981). Now he's back in Hanoi as operations manager for Black & Veatch International, of Kansas City, one of the largest engineering firms in the world. He knows more about the customs and ways of Vietnam than many, yet he's still amazed by the rivers of red tape. For instance, he says his firm has to get approvals from seven different ministries in order to receive an investment project permit. Each ministry has its own set of priorities and review procedures, many of them redundant. "It's not at all like in the States," Nhan says.

Once the various permits are stamped and in place, intrepid managers must wrangle their way around the shortage of such basic commodities as electricity. Robert "Bobby" Watts chuckles when he tells the story of a foreign business consulting company that recently built a new office in Hanoi. The company installed the computers, fancy color printers, networking hardware and software, connected everything to everything else, switched on the power and—pow!—blew every electrical circuit in the building. There simply wasn't enough current coming from the street line to supply the equipment.

Watts, a self-proclaimed "IT cowboy" in the technological wild west of Vietnam, makes his living helping people work around the country's myriad technical problems. To remedy the foreign consultancy's electrical situation, he helped dig to a major power line in the street and tap into it.

AS IN MOST EMERGING MARKETS, telecommunications services in Vietnam are far less developed than those in industrialized nations. Getting local phone lines can take months, and installation costs roughly \$1,000 per line. (By comparison, business lines in the United States often are installed within three days of ordering for roughly \$100.) The quality of in-country long distance calls—Hanoi to Haiphong, for instance—is sketchy at best. Reaching potential distributors and customers in outlying

Want to Learn More?

The following are sites accessible through the World Wide Web that offer more useful information about Vietnam

- **Vietnam Information:** a gopher site that contains information about travel and telecommunications in Vietnam. <http://sunsite.nus.sg/SEALinks/vietnam-info.html>
- **VAEF Home Page:** information on Vietnamese American Education Foundation projects to assist Vietnam in moving into international markets and in improving its educational system. <http://www.saigon.com/~vae/vae.html>
- **Asia Resources/Vietnam:** general business information on Vietnam. <http://silkroute.com/silkroute/asia/rsr/country/vietnam.html>
- **Welcome to Vietnam:** information on culture, economy, opinions, tourism and links to other Vietnam sites. <http://www.tu-chemnitz.de/~ntn/viet-e.html>
- **The VietNam Pictures Archive at SunSite:** pictures of Vietnam including scenery, monuments, people, art and history. Leave plenty of time to download images. <http://sunsite.unc.edu/vietnam/vn-pic.html>

—L. Radosevich

areas is a challenge: Phone lines don't reach many rural areas, and only one in 544 people has a phone. In the cities, international-class hotels are equipped with international direct dialing, but public phones are rare.

To beat the delays and poor service of local phones, many foreign business executives in Vietnam use cellular services. In Ho Chi Minh City, dark-suited businessmen barely miss a beat as they whip out their cellular phones while stepping across streets filled with manic drivers. Cellular service has been available in Ho Chi Minh City since May 1992 and is expanding rapidly into the other large cities. However, as in most countries, it's pricey. Phones cost roughly \$1,300 (they're anywhere from free to \$800 in the United States), and service runs from 7.5 to 15 cents per minute (roughly the same as some U.S. services but more expensive than in developed Asian countries such as Singapore), with extra charges for long distance calls. So far, there is no nationwide roaming service.

Several companies offer paging, charging roughly \$10 for a connection and \$8 per month for service. However, such services are said to face a chronic shortage of operators able to speak English and other foreign languages.

In contrast to local lines, international telephone connections are great, thanks to Vietnamese joint ventures with foreign telecommunications giants such as Telstra International Ltd. of Australia. Telstra provides satellite uplinks to international circuits, so callers as far apart as, say, Hanoi and Boston sound almost like neighbors. Telstra is building an undersea optical fiber cable linking Vietnam, Thailand and Hong Kong, a second cable linking Vung Tau and Haiphong, more satellite earth stations and a direct satellite link with the United States, all of which promise to improve international service even further.

The downside, however, is again cost. International call rates range from \$2.70 to \$4.60 per minute, depending on the country called. Calls from Vietnam to the United States are at top rates. By comparison, U.S. rates to Vietnam can be as low as 89 cents per minute, depending on the service options selected. (As of press time, U.S. carriers did not offer direct-dial service from Vietnam.) These charges add up quickly. At Digital Equipment Corp.'s seven-employee representative office in Hanoi, for instance, long distance charges average \$4,000 to \$5,000 per month, according to Digital's Vietnam country manager Norris Hickerson.



In order to battle the big bills, Digital and others are turning to new callback services. They work like this: Users dial a callback service provider. When the number rings, the user hangs up. The system then calls back the user, providing a U.S. dial tone that can be used to place calls anywhere in the world at U.S. rates, thereby saving up to one half on the charges.

EVEN WITH COST-CUTTING MEASURES, high prices and slow modem speeds make dial-up connections to the home office or other foreign data sources unsatisfactory. Luckily, Vietnam Post and Telecommunications, the operating arm of the Vietnamese government's telecommunications organization, recently began offering high-speed digital leased lines, television transmission and CT2 Trunk radio. VSAT (very small aperture terminal) satellite service is said to be coming soon. And the Telstra undersea cable should make digital videoconferencing, very high-speed data transmissions and multimedia services available by early 1996.

In many parts of the world, the Internet is a popular substitute for pricey international phone and fax communications. But in Vietnam, Internet fever is just beginning to hit. A couple hundred computers have modem access to NetNam, a version of the Internet limited mainly to e-mail. Other users connect overseas to online services such as CompuServe that offer the callback feature. However, Hanoi gives signs of being wary of unfettered Internet access. Watts, for instance, says he got a visit from the police at his home one night about a year ago after setting up a bulletin board on NetNam. He wasn't arrested, but the message was clear: We're watching.

VIETNAM'S government is making improvements to create a more attractive business climate.



All foreign investors are required to have a license issued by the State Committee for Cooperation and Investment (SCCI).





The Vietnamese
workweek is six days
long, Monday
through Saturday. The
workday goes from 7:30
to 11:30 a.m.
and then from 1:30
to 4:30 p.m.



Indeed, business managers in Vietnam say they feel generally spied upon. Hotels and post offices keep a copy of all fax transmissions, and special permits are needed for private fax machines. People furtively hint at even more sinister intrusions. "You can count on data getting stolen, and don't encrypt it because that makes people nervous," says the Barents Group's Doyle. What do you do with sensitive information? "You keep it to yourself," he says.

When it comes to finding equipment, local supplies and suppliers are not up to international standards. Stores sell Asian-built versions of well-known brand-name hardware, which are considered inferior to western-built versions. (Whether this is true is a topic of debate.) Software copying is rampant, and the spread of computer viruses is unavoidable. So when companies come in, they typically bring equipment with them.

Experienced staff and support providers are also in critically short supply. So much so

that Unisys country representative Maureen Flanagan wouldn't name the outfit that recently rewired her company's new 17-room office in Hanoi. "A decent provider is a competitive advantage here," she says. In addition, skilled Vietnamese Unix programmers are said to be rarer than the endangered snow leopard. In general, the Vietnamese lack the digital experience common to technology-savvy youths from industrialized countries: push-buttons, remote controls, keyboards and joysticks. Therefore, training has to start with the basics. However, "their mind-set is good for IT, and people have a high drive to succeed," says Pised Nantamanop, MIS manager for Pepsi-Cola International's Asia Division, based in Bangkok, Thailand.

THESE OBSTACLES AND OTHERS HAVE helped take the blossom off Vietnam for a number of U.S. companies. After President Clinton lifted the trade embargo, "we expected Americans to come en masse," says Doyle. "Instead, it was a trickle." As of May 1995, Vietnam reported that the United States was only the 13th-largest foreign investor there, trailing Asian tigers such as Taiwan, Hong Kong, Singapore, South Korea and European countries including France, Switzerland and Britain.

But to make the business climate more attractive to outsiders, the Vietnamese government says it is working to make improvements, and some progress already is apparent. For instance, whereas ministries used to be able to sit on applications indefinitely, they now have time limits for processing them.

A key piece of Vietnam's reconstruction program is the development of an information technology infrastructure. Nicknamed IT 2000, the master plan includes developing IT training, research and development, industry, data communications networks, and standards and open systems in Vietnam. For instance, the plan calls for 20,000 IT specialists to be trained by the year 2000, half in programming and a quarter in systems analysis. The first step is to beef up the IT departments in several Hanoi, Ho Chi Minh City and Danang universities by sending teachers and experts abroad for training. Also, the plan calls for all pupils from secondary school on to be taught IT and computer use. "In the process of renovating Vietnam, the development of an information technology infrastructure is of utmost importance," says Phan

No MIS, No Problem

MIS is a fairly new concept in Vietnam, so foreign companies setting up shop there have had to take an innovative approach

When I first got to Vietnam, managers here didn't know what MIS was," says Pised Nantamanop, manager of information systems for Pepsi-Cola International's Asia Division, based in Bangkok, Thailand. Of course, that made his job of hiring MIS support staff for International Beverages Co., Pepsi's 850-person joint-venture beverage bottling operation in Ho Chi Minh City, a bit, well, challenging.

So, Nantamanop trained his own. First, he found three hackers who loved playing around with illegally copied software on the office PCs. Next, he explained why they shouldn't copy software—because of licenses, viruses and such. Then he asked if they wanted to be taught MIS. They did.

He sent them abroad for training and had English training materials translated into Vietnamese. Now they are adapting to a new client/server integrated manufacturing and business system better than his more experienced MIS staffers in other countries are. "They are very enthusiastic here, as compared with Thailand, which has had business systems for 40 years already and where the MIS staff is not as open to change," Nantamanop says. "Here they are perfectionists and want to change to be the best in the world."

—L. Radosevich



Dinh Dieu, vice chairman of the Steering Committee for the National Program on Information Technology in Hanoi.

However, in order for those plans to work, the country is counting on hard-to-get foreign investment. Some help is beginning to trickle in: The World Bank, for example, has agreed to fund the lion's share of a \$60.5 million project to build a computerized national check-clearing system. But so far, a broader lack of funds and disputes over jurisdiction have kept the IT 2000 plans from graduating from draft to approved form. Regarding the funding challenges, "we have no illusions," says Phan.

Still, work is underway. Positive developments include joint-venture investments from foreign companies that are helping to fund infrastructure development in hopes of some day making a buck off the deals. Some examples include Swedish telecommunications firms Ericsson Radio and Comvik International, which are supplying equipment for a nationwide mobile telephone service; the Public Communications Networks Group of Siemens AG, Germany, which has a contract to install, by the end of this year, a nationwide digital GSM (global system for mo-

bile communications) mobile phone network; and Sprint International Co., which agreed in February 1995 to sell equipment to the Vietnam Post General Department to allow Vietnam to join the Internet via Sprintnet.

Meanwhile, political changes on this side of the world continue to make Vietnam a more viable market for U.S. companies. In February 1995, the United States opened a representative office in Hanoi, the first official diplomatic station in 20 years. And in July 1995, President Clinton extended full diplomatic recognition to Hanoi.

These technological and political changes should make it easier for more companies to do what Pepsi is already doing: add Vietnam to the list of emerging market countries whose business is helping them stay in competition. "You run into some difficulties," says John Mims, general manager for IBC, "but for us, Vietnam is extremely important because it's one emerging market in which we have a lead over our major competitor."

You can drink a Coke to that. 

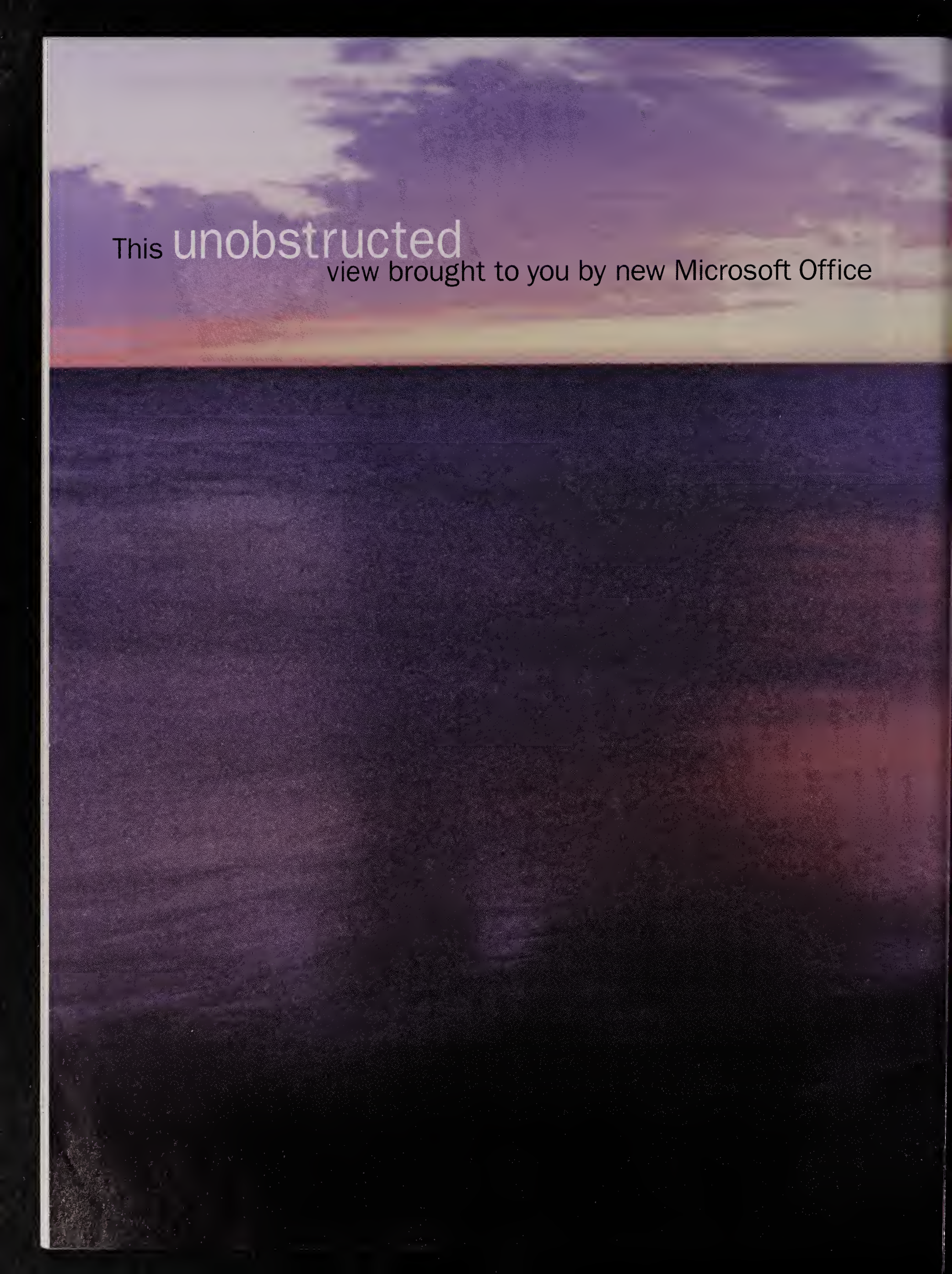
Lynda Radosevich is a freelance writer based in Belmont, Mass. Her e-mail address is lrado-sev@interserv.com

DEVELOPING AN I.T.
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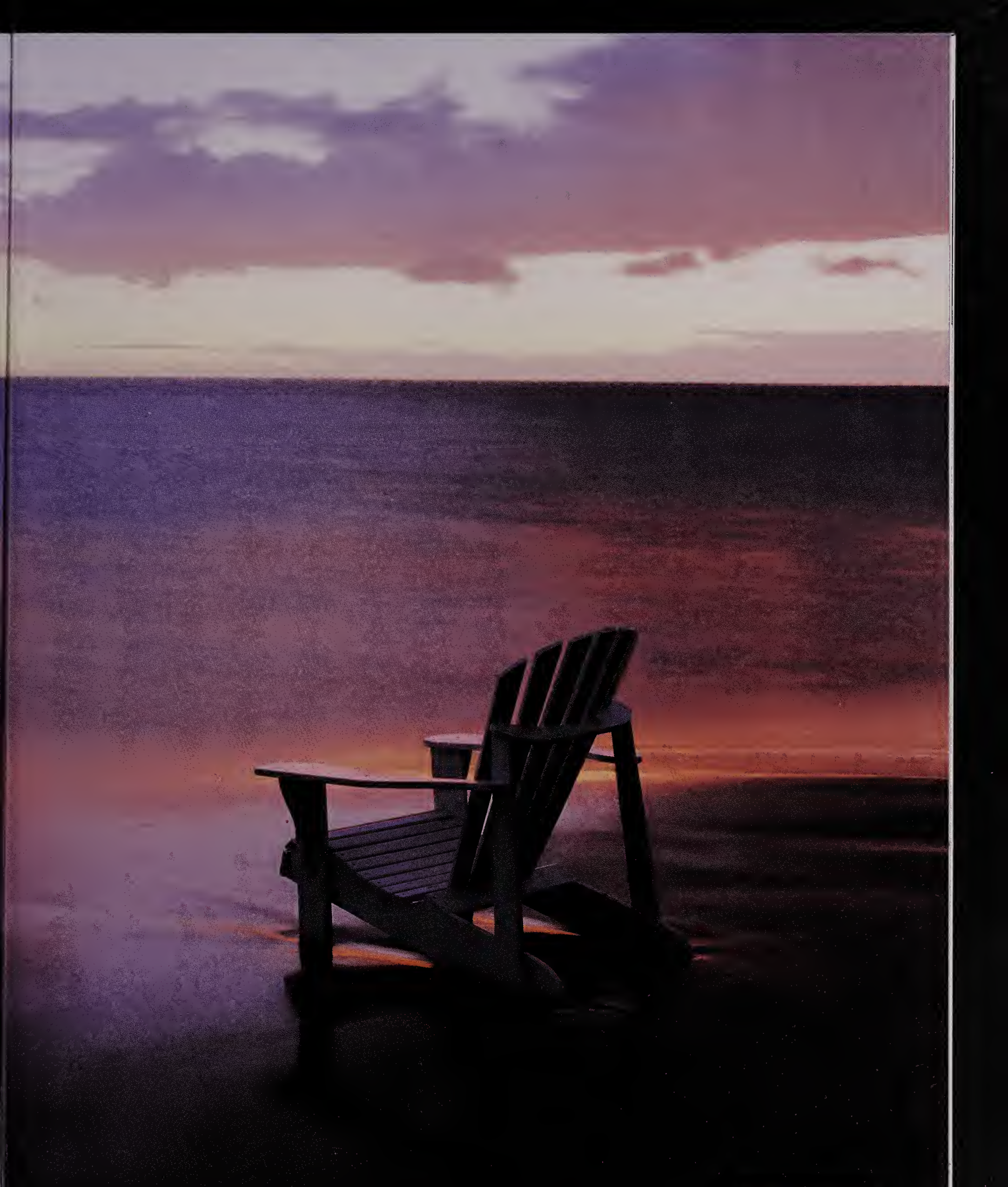


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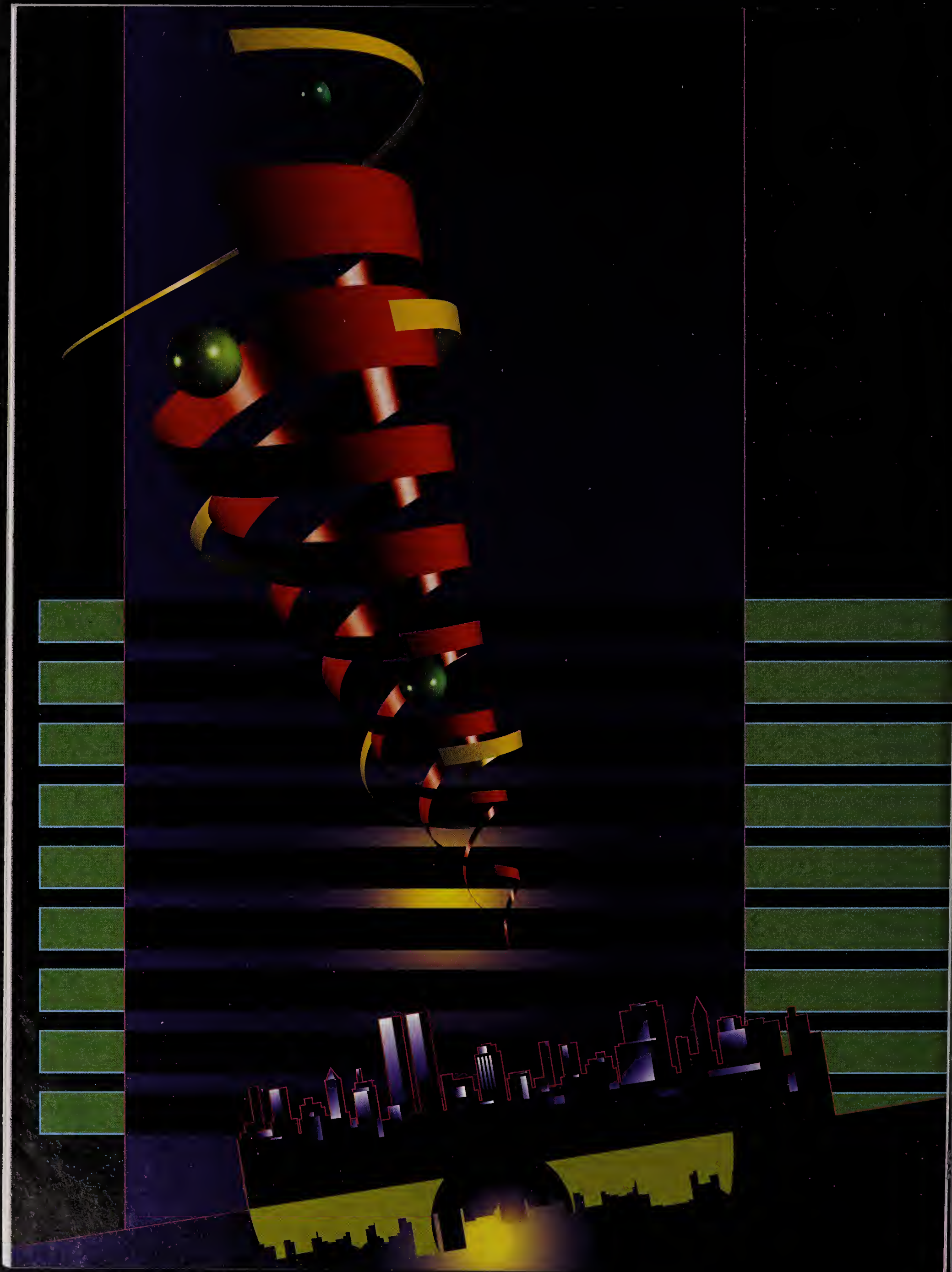


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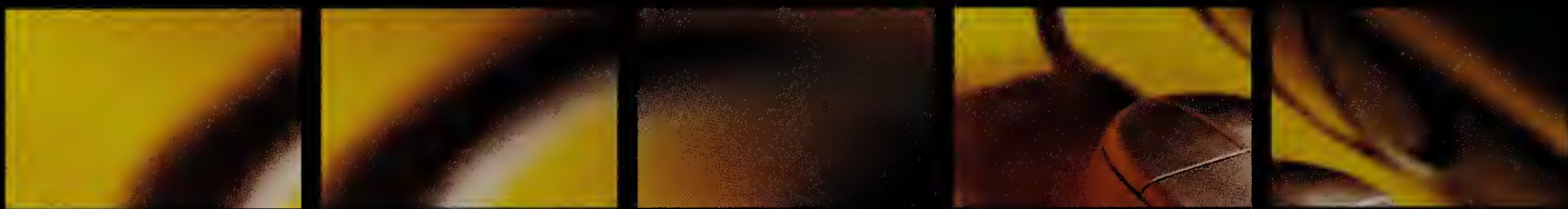
BY JOHN EDWARDS

AS IF PARTICIPATING IN SOME KIND of giant, global jigsaw puzzle, telecommunications companies are joining forces with cable TV system operators, multimedia content providers, computer vendors and a variety of other "new media" firms in interlocking alliances that promise to bring a spectrum of leading-edge communications technologies into both homes and businesses.

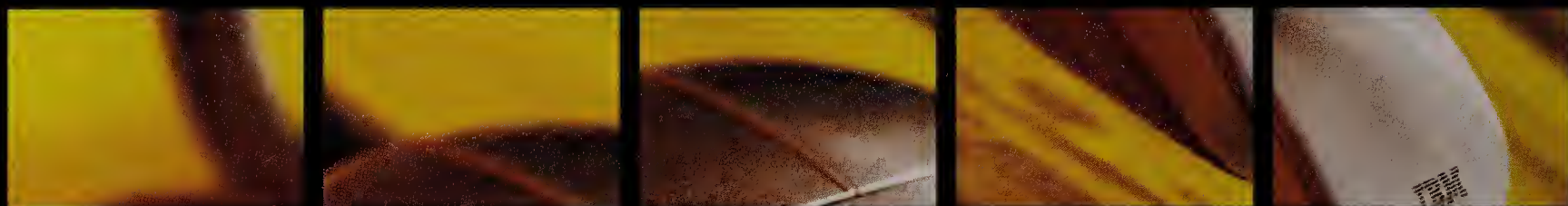
With deals ranging in scope from casual business arrangements to formal joint ventures to full-fledged corporate mergers and acquisitions, regional Bell operating companies and telecom

giants like AT&T, MCI and Sprint all believe they can turn themselves into major players in the next-generation media market by hooking up with companies that specialize in various kinds of complementary technologies. Likewise, potential partners in the cable, multimedia and computer industries are looking toward the telecommunications companies' networking resources as a powerful new way of bringing their products and services to an eager public.

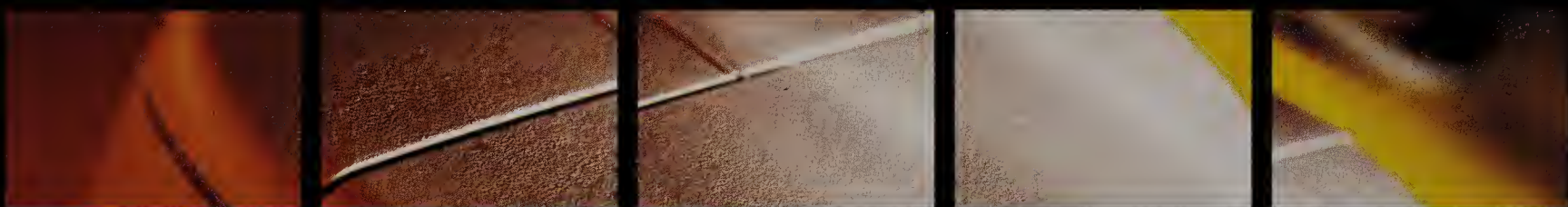
While those emerging alliances may keep battalions of lawyers, accountants, business planners and other strategic thinkers busy in the years ahead, information systems directors



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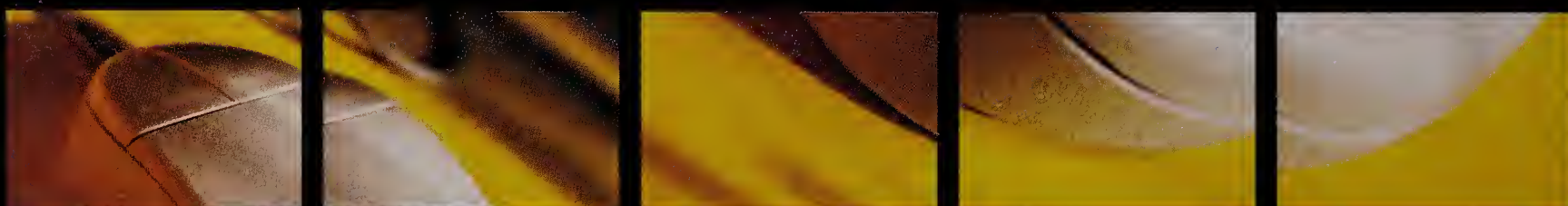
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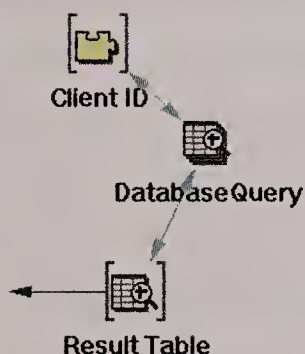


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at the newly united organizations will also feel the winds of change blowing at their backs, and they would be wise to batten down the hatches.

"Mergers and alliances are going to be the name of the game for a while," observes Adam Thierer, a telecommunications analyst at the Heritage Foundation, a Washington-based think tank. He notes that a more tolerant regulatory environment in the nation's capital is allowing telecommunications companies and their counterparts to explore alliances that would have been considered impossible only a few years ago. "Government is allowing mergers and alliances to happen where in the past it might have tried to prevent them on the basis of their size and scope," he says.

According to Thierer, Washington is willing to give the new alliances some breathing room in order to help companies, as well as regulators, cope with a rapidly changing playing field. "The growing attitude is that it doesn't make sense to preempt competition in this industry. If there are serious market power concerns later on, they can be dealt with through the anti-trust laws."

For most telecommunications companies, an alliance serves as a quick way of getting into a new business

"Telcos feel that they all need a piece of the multimedia pie, or they will be left holding old, outdated technology."

—GREG STACK

says. "The failure of any single product could bankrupt a company. Alliances are living proof that there is safety in numbers."

Much of the current alliance frenzy stems from the fact that no telecommunications company can afford to be stuck with 20th-century products and services at the dawn of the 21st century. "Telecommunications companies realize that there's going to be a major change in society thanks to advancements in multimedia technology over the next several years. They feel that they all need a piece of that pie, or they will be left holding old, outdated technology," notes Stack.

Charlie Federman, chairman of Broadview Associates, a Fort Lee, N.J.-based company that tracks merg-

address the demand for state-of-the-art ISDN or ATM technology, they're out of the game," he says. "Networking product life cycles no longer can afford vendors the luxury of extended R&D efforts; therefore, vendors must buy what would otherwise take them too long to build." Federman adds that the time needed to bring a product to market is the key motivator. "Technology is evolving so quickly that today's hot product is tomorrow's legacy offering," he says.

The rush toward the Internet and other online services has also intensified alliances among those in the telecommunications industry and complementary fields, says Federman. He notes that companies providing online access and tools are moving quickly to establish market share in these relatively new markets by forming alliances or acquiring content providers, multimedia development firms, hardware vendors and others.

"Access is the easy part of the equation," explains Federman. "Once market position is established, vendors must ensure ongoing delivery of value-added services and content to lock in customers and avoid becoming commodity providers."

So how does the IS manager adapt in this new era of partnerships? In a

92% of survey respondents think that the "winners" in the alliance wars will be between large companies and new entrants to the market. **75%** say that alliances will be necessary to most companies' survival. And **93%** indicate that their own companies are already partnering aggressively...

without starting from the ground up, says Greg Stack, vice president of telecommunications for Chicago-based systems integrator Technology Solutions. "The cost of developing next-generation hardware or software—or any type of telecommunications technology, for that matter—would require such a huge investment that virtually no company could handle it on its own," he

ers and acquisitions in the information industry, says time pressure combined with the need to get into such high-speed data communications technologies as ATM (asynchronous transfer mode) and ISDN (integrated services digital network) are forcing telecommunications companies to seek alliances with or acquire networking technology vendors. "Vendors now realize that if they cannot

perfect alliance scenario, a manager would have time to adjust to the situation, says Stack. He points to AT&T's slow-motion acquisition of McCaw Cellular Communications Inc. as an example. "In most instances, there are signals that an alliance or a merger is on the way, such as the announcement of an OEM or reseller agreement," he says. "That's when the manager

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needs to take the first steps to learn about the potential partner."

Managers should make a dedicated effort to inform themselves about the activities of their companies' allies, says Stack. "Then, in order to help develop a long-term strategy, they must create a good communications relationship with the partner." He adds that directors should conduct site visits and engage in executive-level non-disclosure discussions with senior-level executives at partnering companies. "You have to learn where the synergy is," he says.

"An IS director involved in a new alliance needs to develop the skill of ducking to a high art," jokes Robert M. Dunn, managing director of Regent Associates International, a corporate development specialist for the IT industry in East Hartland, Conn. According to Dunn, learning to adapt to new internal and external technologies brought in by a strategic partner requires diplomatic skills as well as technical and managerial abilities. Whether one is dealing with internal changes (such as a new operating system) or external products (like state-of-the-art video-on-demand technology) the added workload can be considerable. "Except in the case of a merger, the

"An IS director involved in a new alliance needs to develop the skill of ducking to a high art."

—ROBERT DUNN

quired in order to make the joint venture a success. Dunn notes that it's up to top management at both ends of the partnership to define what types of information will be made available and which individuals will have access to it. "That's the ideal, anyway," he adds.

For IS directors at old-line telecommunications companies, keeping pace with new technologies brought into the organization by one or more leading-edge partners can be a major challenge. Steven Freeman, a managing partner at Andersen Consulting, a Chicago-based IT consulting firm, believes that the changing IS environment will require managers to become more flexible and willing to embrace change. But he points out

Freeman observes that IS directors who find themselves falling behind the emerging-media learning curve can take instructional courses and read books and magazines focusing on new technologies. But, he admits, for many Baby Boomer directors facing professional competition from Generation X infonauts, gearing up for the latest technologies can be an uphill struggle. "You're talking about competing with whiz kids who spend their lives doing this kind of [new media] stuff. You're talking about button-down-collared phone company types having to manage guys with earrings and ponytails—that's going to be pretty tough," he says. For managers who are unable or unwilling to adapt, the only solution may be to find a job with a company that isn't involved with new media technologies—an increasingly unlikely possibility given the current state of the IS market.

Many telecommunications companies bring in new, technologically savvy IS managers and staffers in the immediate aftermath of an alliance announcement, says Regent Associates' Dunn. Some also look for outside help. "Considering the training costs and cultural factors involved, it's often more effective for the telco's IS operations to be ex-

*...but only **34%** of respondents see long-term partnering prospects as "good," **54%** say they are "fair," **9%** think they are "poor," and a mere **2%** say their chances of success are "excellent."*

—Andersen Consulting's 1995 survey of telecom industry executives

manager is not likely to have complete collaboration from day one," he explains. "Companies carefully guard their proprietary information, and they're very jealous about how they share their 'sacred data.'"

Dunn says there isn't too much a manager can do to obtain key information from a reluctant partner other than to tread lightly and carefully and to stress the fact that access to certain types of information is re-

that many IS directors are already so overloaded with work that adding new responsibilities—particularly in areas in which they have no previous experience—can be a recipe for disaster. According to Freeman, the problem is particularly acute for directors in traditional telecommunications companies where "the resources are focused on midstream, mainstream or old-stream technologies that simply just don't relate to this new game."

panded through an outsourcing service than to do it internally," he says.

Cultural conflicts can also affect top management. Getting disparate corporate cultures to work together can be a tricky matter, notes David Kuhns, a partner with Paul Ray Berndtson, an international executive search firm based in Fort Worth, Texas. "To be successful, companies must find 'integrated managers' able to lead these industry melting pots,"



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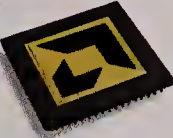
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he says. Kuhns' definition of an integrated manager is someone who has successfully worked in different fields and demonstrates cultural adaptability. "An integrated manager isn't afraid of change; he can appreciate the fact that it takes contributions from many different areas to create a finely tuned machine."

Still, an executive's success in one industry doesn't necessarily guarantee future accomplishments in another, says Kuhns. He notes that although many firms, including telecommunications companies, go outside their core field to recruit management talent for an emerging business, organizations need to closely examine all of a potential executive's strengths and weaknesses—including his or her "culture fit." For example, Kuhns notes that before Michael Ovitz was

"You're talking about button-down-collared phone company types having to manage guys with earrings and ponytails—that's going to be pretty tough."

—STEVEN FREEMAN

tapped to head Walt Disney World Co., the former chairman of Creative Artists Agency recruited former AT&T executive Bob Kavner to

serve as CAA's liaison for its interactive joint ventures with Bell Atlantic Corp., Pacific Telesis and Nynex Corp.

According to Kuhns, Kavner quickly demonstrated that he knew more about telecommunications than entertainment programming. "Ovitz realized that although Kavner was respected by the telcos, he had no 'insider' status in Hollywood that comes from knowing the culture of the entertainment industry."

Executives, managers and staffers at telecommunications, cable, multimedia and computer companies may speak different languages, but they can all agree on certain immutable technological facts, says the Heritage Foundation's Thierer. "Understanding what it takes to build a high-speed competitive network is easier than putting two fashion designers together and trying to get them to make a subjective judgment about what makes a good dress or suit," he says. "The simple nature of the technologies involved means that more of these alliances will work than fail."

New technologies are unfolding in a logical, almost building block-like fashion, and telecommunications companies are becoming very adept at spotting where their services, such as high-speed information transfer, can best fit in, according to Thierer. "A lot of this isn't rocket science," he says.

But Andersen Consulting's Freeman says it will be many years before industry analysts will be able to judge whether the alliance mania of the 1990s was a historic turning point or a passing fad. "It's unclear who the winners are going to be," he says. "That's not going to be known by the year 2000." Regent Associates' Dunn agrees. "It's going to take some time for all of this to unfold," he says. "But it will be interesting to watch. The players seem to change every day, and the stakes keep rising." 

John Edwards (70007.412@compuserve.com) is a freelance writer based in Mt. Laurel, N.J.

The Perils of Partnerships

Like couples in love, companies decide to enter into alliances for all sorts of reasons, both good and bad

Charles Roussel, an associate partner at Andersen Consulting, a Chicago-based IT consulting firm, says telecommunications companies frequently have unrealistic expectations for what an alliance can accomplish. "There's too much emphasis on a vague synergy and not enough on common strategy," he says. According to Roussel, companies can sidestep a potentially bad alliance by avoiding several common pitfalls:

- Partnering with close competitors to avoid future competition—This plan is likely to backfire because there's inherent mistrust between large and equal players in the same marketplace.
- Partnering to acquire skills—When set up as an acquisition, such an alliance is likely to be an unwise investment because financial markets do not value companies for this and generally will not reward them for it.
- Partnering to raise capital—This is a mistake unless at least one partner is prepared to give up management control.
- Partnering with the expectation of quick paybacks—Partnerships are not likely to produce significant paybacks in the first three to five years. Instead, seven to 10 years is usually necessary to realize a healthy return on investment.

The overall lesson, says Roussel, is "to enter into partnerships only when you have a clear commitment to the financing, strategic direction and senior management attention to make them work."

—J. Edwards

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Some of you may already know me from my commentaries in this magazine, where, despite the editors' refusal to include me on the masthead (or let me use the front door for that matter), I hold considerable editorial sway. I am also the author of *My First Business Book* (Tom Peters: "I am no longer in search of excellence. I have found it, and its name is Poundcake"); director of Ezra Poundcake's Business Seminars for Busy Busy Businesspeople ("Transforming our clients from the Curleys into the Moes of corporate stoogedom"); and, most recently, president of The Poundcake Group for Old Ways of Thinking About New Problems ("Our mis-

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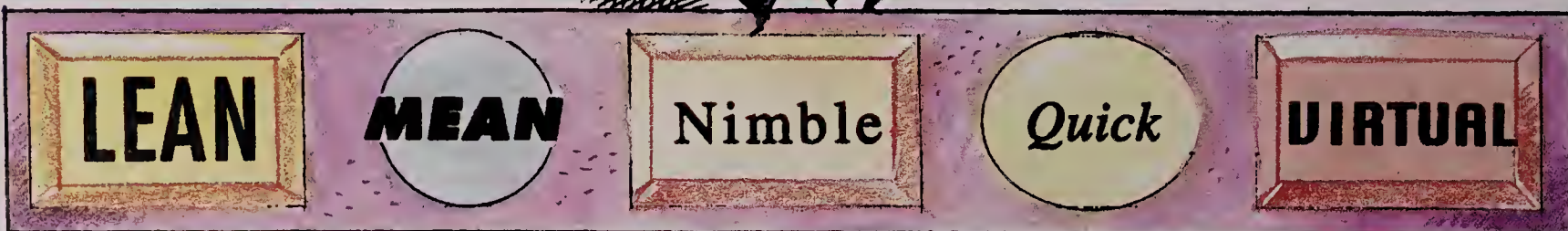


sion: to wipe out change in this lifetime").

Unfortunately, despite their revolutionary premises, none of these enterprises has been what you might call a runaway success. In fact, I now find myself embroiled in a number of rather knotty lawsuits involving, among others, the Justice Department, the *Harvard Business Review*, several well-known philanthropic organizations and the estate of the late Bill Bixby. Consequently, I have decided to hang out my shingle in cyberspace, on the assumption that if they can't find you, they probably can't hurt you.

Of course, setting up shop on the Web is not something to be entered into lightly. I realized at once that my home page had to be a thoroughly professional job, so I set out in search of the best talent available. After wandering around my neighborhood for a few days knocking on garage doors, I came upon Jack-O, a former jai alai champion from the community college forced to give up the game because of a weak chest. Undaunted, the spunky lad had quit school and established his own Web-development firm; when I first stumbled across him, he was drawing up plans for an online mall called Ye Olde Shoppes in Cyberspace. Realizing that I was in the presence of genius, I signed him on at once. He is responsible for the grandeur you see before you.

But recruiting talent isn't the toughest part of offering a consulting service online. The real problem is that it's rather difficult to get paid for anything. Jack-O tells me this



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digital cash business is dicey, and although he believes there's some way to take credit-card information over the Net, he's a trifle fuzzy in that area (not surprising, really, seeing as he's never had a credit card, or even a Social Security number for that matter.)

But the Poundcake ingenuity never flags! To solve the problem, I have decided to adopt the model of another well-respected organization with revenue-source difficulties: public broadcasting. Therefore I would like to take this opportunity to announce my very first pledge drive! I'm even offering premiums, but not the crappy kind you get from NPR (Nina Totenbags and "If you don't like opera, you ain't got breeding" T-shirts). No, my premiums are custom created for you, the visionary business leader! For example, send \$50 and you'll receive an inspirational bumper sticker with your choice of messages ("Brother, Can You Paradigm?" or "Reengineers Do It In Process Teams"). Send \$100 and you'll get a sweatshirt left over from my executive outward-bound program, "Working Together/Winning Alone" (sizes XL, XXL and Lumpy). And any donation over \$100 buys breakfast for you and a date with myself, Jack-O and Jack-O's iguana, Netscape, at the local Denny's. Quantities are limited, so act now.

(Naturally, I would never dream of asking anyone to entrust their credit-card information to the Internet. While Jack-O and I aren't quite clear on the specifics, we have heard all those Tales from the Encrypted horror stories and recognize that sending private information over public wires is the same as scrawling it on a bathroom wall—not that *that* gets you much attention; in fact, I'm seriously thinking of experimenting with another marketing approach. Actually, I'm not too terribly sure about the phone system either, so what might be best for now is to simply drop your credit card in an envelope and send it to me via snail mail, as we in the cyber elite oh-so-wittily refer to it. I also accept cash,

checks and Hummel figurines.)

Hopefully this financing thing will sort itself out soon because, once it does, I can get down to the real business of the Web—offering interactive services to cybersophisticates such as yourself. The first such service, which I plan to roll out early in 1996, I have humbly dubbed Ezra's Amazing Downsize It Yourself (DIY) device. Visitors to my Web site will be able to submit online a complete list of their employees, along with the number of jobs they need to cut in order to remain lean, mean, nimble, quick and, above all, virtual. That list will automatically be run

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you see before you.**

through a proprietary software system currently being developed by Jack-O (using object-oriented programming and Plasti-goop), which will almost instantly generate a list of whom to cut and whom to humiliate first and then cut. In beta testing, DIY software users were able to cut their workforces by as much as 80 percent in 3.7 seconds.

The amazing thing about this software is that it works without knowing the positions or salaries of the people in question, or even what line of business the company is in. Rather, this *expert system* was designed to identify names that are the same as or similar to those of people who have rejected me in the past, or of actors in situation comedies canceled

after only one season. (If those criteria fail to prune the list sufficiently, the system does a second cut based on vowel groupings I find noneuphonious.) This scientific approach to corporate downsizing is unlikely to be challenged in court, as it fails to discriminate against any legally protected group and is in fact so silly that no one will believe you actually did it.

DIY is just the first of many unique and indispensable services I plan to offer online. But it is important to remember that when it comes to creating successful Web pages, entertainment is at least as important as usefulness. My original plan was to fulfill this requirement by posting my autographed photo of Mr. Television himself, Gene Rayburn, but Jack-O wasn't entirely sure how to go about it. So in order to collect some lively, provocative, uncopyrighted material, I have decided to ask you to help me entertain you. Accordingly, I herewith invite any and all celebrities reading this page to tell me about your favorite Web sites. Not only will I post your comments in future installments, I'll also tell people I know you (I'm especially interested in hearing from Dom Deluise and the female cast members of *Twin Peaks*).

While I'd love to receive your e-mail directly, in light of those aforementioned pesky lawsuits, it's probably better just to send any correspondence to my amanuensis, Leigh Buchanan, at CIO sister publication *WebMaster* magazine (buchanan@cio.com). She's also been handling Jack-O's correspondence, since a freak electrolysis accident last March cost him the use of both hands.

Until next time, then, may all your firms be nimble and your teams cross-functional. 

Ezra Poundcake, a.k.a. "the Paradigm-meister," is the former crossword puzzle editor at TV Guide. He has never, ever inflated the sales of his own books by buying copies surreptitiously, but now that the idea has surfaced he wouldn't rule it out. The intrepid may wish to visit his home page at <http://www.cio.com/WebMaster/wmezra-home.html>.

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Every office has been on the losing side of the battle against document overflow. Whether inundated by internal memos, copies of proposals or customer databases, it's often difficult to make sense of the never-ending flood of files and paper documents.

Now accounting firms, law offices, medical records departments, dental clinics and others have a way to label and physically track files, charts and a variety of other items with their PCs using bar-code technology from StrandWare Inc.

Designed for small business and commercial users, StrandWare's fully integrated software package, called BackTrack, combines a what-you-see-is-what-you-get (WYSIWYG) bar-code label design and print utility with a database to facilitate document tracking.

With BackTrack, users can utilize bar-code technology to control document usage with functions that include time and date stamping, overdue reports and reservations. The PC-run database can also be customized for an individual user or type of application.

Security levels, menus, field descriptions and other features can be defined in a variety of ways to meet user requirements. Log in/out accuracy is assured by scanning bar-coded items or by key entry of the numbers printed below the bar code.

BackTrack is designed for plug-and-play use, requiring minimal computer expertise. The software supports a wide variety of dot-matrix, laser and direct thermal printers, and it enables users to create numerous bar-code symbologies. BackTrack supports all Windows drivers and is now available for \$749. For more information, call StrandWare Inc. at 800 552-2331.

Nomadic Teleconferencing

Fueled by improved technology and falling prices, the videoconferencing market has grown to an estimated \$660 million and is expected by industry analysts to climb to more than \$10 billion by 1997. Dozens of companies are currently vying to bring solutions to this explosive marketplace. Dolch Computer Systems has taken a giant leap to the head of the bunch with what the company claims is the industry's first-ever portable video teleconferencing platform, TelePAC.

TelePAC comes complete with a video camera and all of the necessary expansion capability for integrating the highest-performance teleconferencing Codecs and ISDN modems. It is designed for systems integrators and high-end business users. As the first fully functional mobile video teleconferencing system, TelePAC provides a lightweight, compact alternative to portable systems.

TelePAC is a specialized version of Dolch's PAC series. Prices for a monochrome system begin at less than \$5,000; color systems start at about \$6,300. More information is available from Dolch Computer Systems at 510 661-2220.



Eloquent Computers

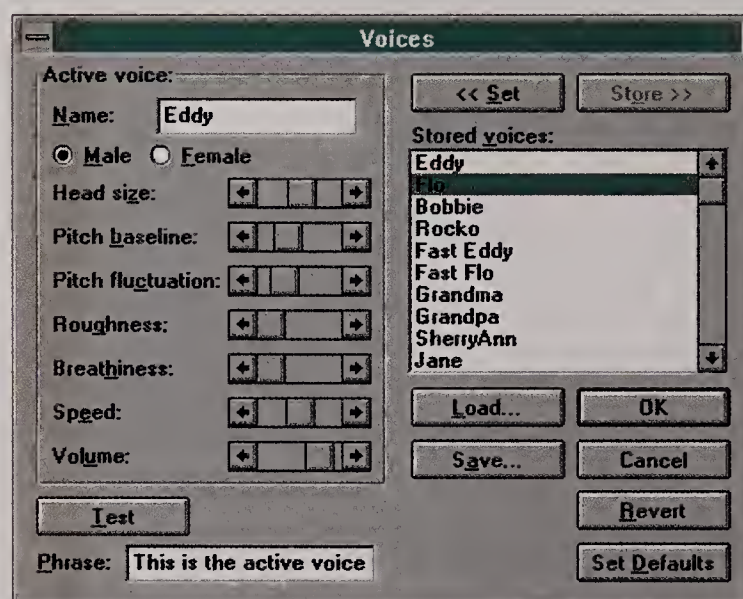
Imagine a computer that sounds like a bored, peevish child, a woman with a Southern accent or a man with a cold. Eloquence, Eloquent Technology Inc.'s new text-to-speech software, converts any input into "humanlike" synthesized speech with expressive intonation. Voices can be created

Users can emphasize particular words, express boredom or excitement, and slow down, speed up or switch voices in the middle of a sentence.

Eloquence was initially created to provide hearing-impaired individuals with an improved text-to-speech software package, but it is currently being incorporated into a variety of products, including a talking navigational and mapping system for automobiles, a Drug Information Kiosk program (designed for teenagers to explain the effects of drugs), and a talking dictionary targeted to individuals who speak English as a second language. The computer spells the word and verbally pronounces it for the user.

The company plans to introduce Eloquence modules in Japanese, Spanish and German.

It runs on Sun SparcStations and PCs running Windows. Development for other platforms is scheduled. For more information contact Eloquent Technology at 607 266-7025.



by controlling deepness, pitch and age parameters. Simple annotation symbols can be employed to create a wide range of special effects, such as hoarseness or breathiness.



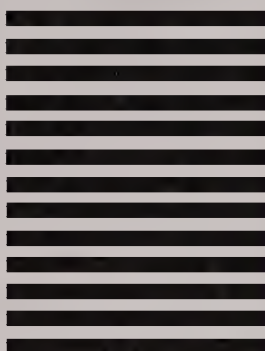
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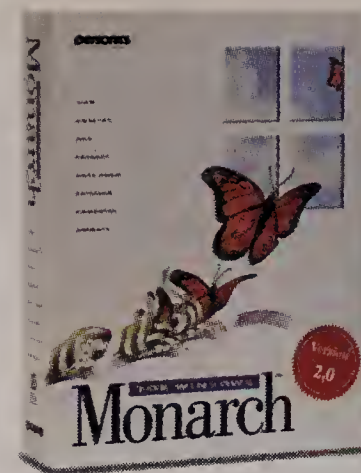
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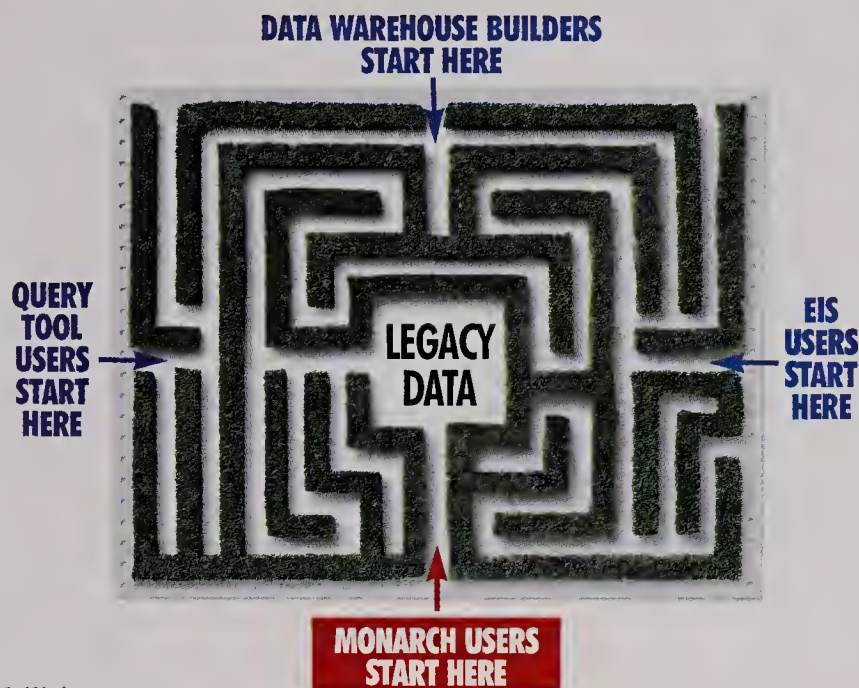
Chances are, someone in your organization is already using Monarch™ for Windows to access legacy data. It's one of those applications that comes in through the back door and soon, entire departments are using it. In fact, more than 100,000 copies have been sold.

Monarch is the leading product in an emerging software category called *report mining systems*. It lets PC users dig information out of spooled report files. Input a report file to Monarch and out comes live data that users can query, filter, analyze, visualize, and export to other applications.

Monarch offers everything you'd expect in a state-of-the-art business intelligence tool, including drilling, charting, and multi-dimensional reporting capabilities.

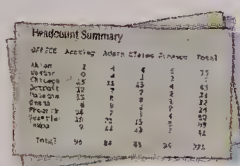
What's different about Monarch is its ability to leverage *existing* reports and reporting systems as a source for data.

You don't need to build a data warehouse or deploy special middleware technology. Monarch works right out of the box. That's why IS managers and industry analysts are embracing Monarch as a breakthrough data access product.



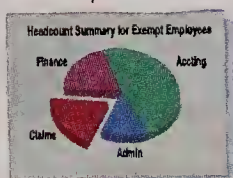
Analyze.

Create custom reports and analyses with data from the original report.



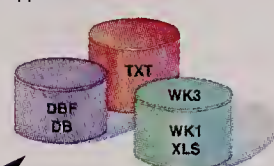
Visualize.

Create charts in a variety of formats.



Export.

Extract, filter, and export data to your favorite PC applications.



Print.

Print selected pages and save paper because you print only the pages you need!

Copy.

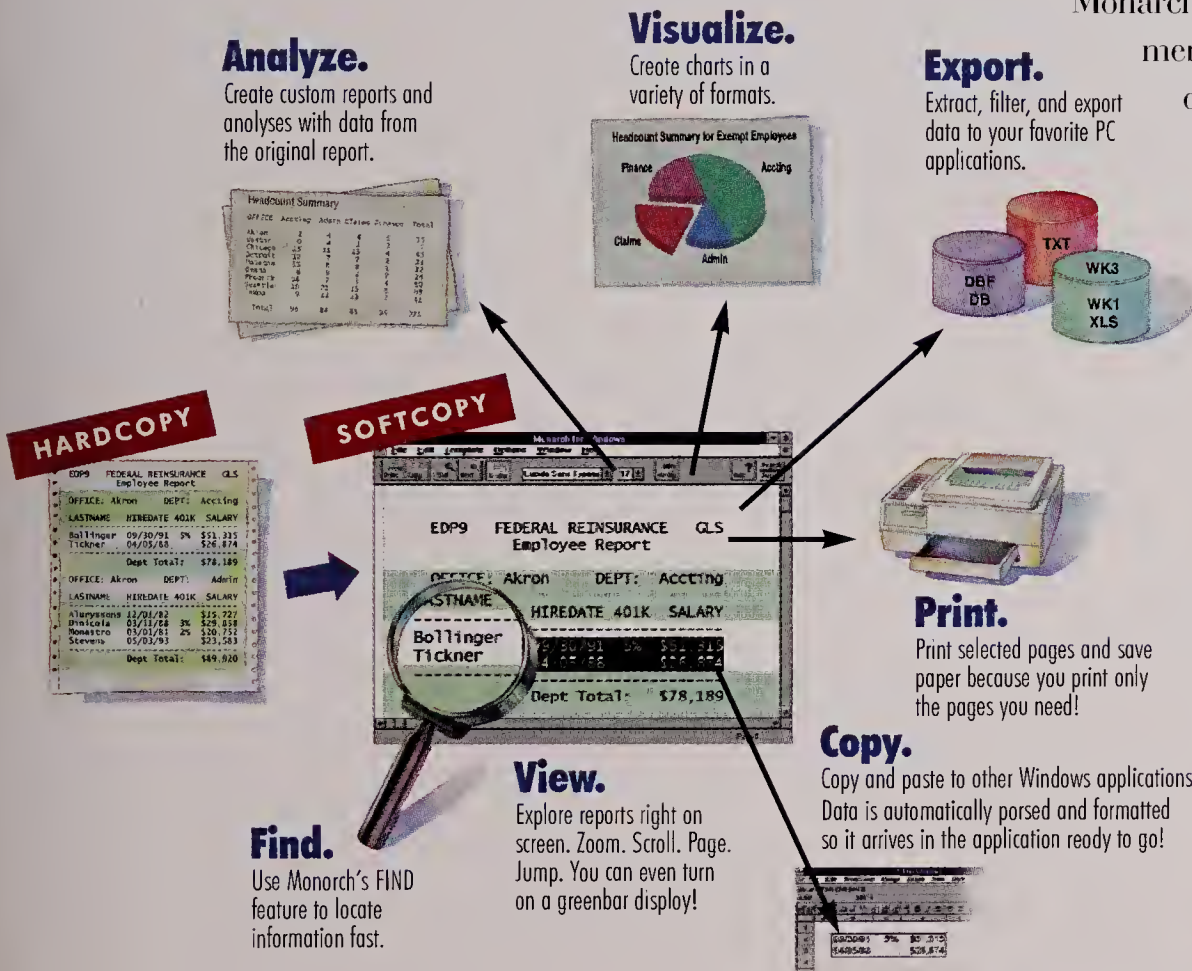
Copy and paste to other Windows applications. Data is automatically parsed and formatted so it arrives in the application ready to go!

View.

Explore reports right on screen. Zoom. Scroll. Page. Jump. You can even turn on a greenbar display!

Find.

Use Monarch's FIND feature to locate information fast.



Monarch requires no reengineering and complements whatever comprehensive information

delivery systems are ultimately put in place. It can be part of a strategic data access solution, or simply a tactical measure to satisfy data-hungry PC users who want immediate results.

Call **1-800-445-3311** to request a FREE Monarch evaluation kit, including demo disk and an informative White Paper entitled *Report Mining: A new way to access corporate information*.

DATAWATCH®

234 Ballardvale Street, Wilmington, MA 01887
Tel: (508)988-9700 Fax: (508)988-0105

DATAWATCH is a NASDAQ traded company.
National Market: DWCH.

NASDAQ®



Monarch brings existing reports on line and lets users access report data. It works with reports produced on any mainframe, midrange, client/server, or PC system.

You're about to plunge into client/server.

You've got a few butterflies, and plenty of questions.

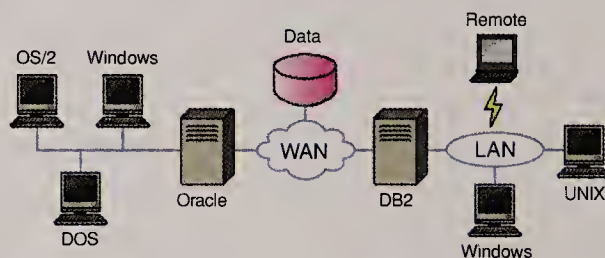
Fortunately, thousands have done it before.

And we can show you their blueprints.

The challenges of moving to client/server are well documented. But so are the secrets of success.

IBM has helped companies all over the world design multivendor client/server systems to help them gain a competitive advantage, adapt to change and get closer to their customers. And we're eager to share our knowledge.

We've documented the experiences of many companies in our Client/Server Advisor. It's a vast Lotus Notes®-based library of proven solutions that demonstrates how others have solved many of the problems you face, and illuminates the potential pitfalls. It lets you look at the challenge from



Can your computer company do this?

every angle, to find real solutions that truly enhance your business.

We're prepared to dive in with you, putting knowledge into action.

IBM is committed to open standards, so we can help maximize current investments and integrate whatever new technology you might need. Whether it's made by

IBM or anyone else. If you'd like to exploit our experience, call 1 800 IBM-3333, ext. JA110. Or visit our web site at <http://www.csc.ibm.com> to find out how we've helped others meet the challenge. Before you make the leap.



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